

Adequate Financing, Soil Tests, Education Lead to Greater Fertilizer Sales, NPFI Told

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Institute Elects

**Richard E. Bennett,
L. Dudley George**

WHITE SULPHUR SPRINGS, W.VA.—Richard E. Bennett, Farm Fertilizers, Inc., Omaha, was elected president of the National Plant Food Institute, and L. Dudley George, Richmond Guano Co., Richmond, Va., was elected chairman of the board at the closing session of the annual convention here.

Mr. Bennett succeeds John R. Miller, Price Chemical Co., Louisville, and Mr. George succeeds C. T. Prindle, Swift & Co., Chicago.

Institute officers who were reelected are Paul T. Truitt and Dr. Russell Coleman, executive vice presidents; W. R. Allstetter, vice president; Louis H. Wilson, secretary, and William S. Ritnour, treasurer.

The Institute elected 12 new members to its board of directors for terms expiring in June, 1961.

They are: J. H. Epting, Epting Distributing Co., Leesville, S.C.; G. R. Monkhouse, Shell Chemical Corp., San Francisco; Jacob White, Allied Chemical Corp., New York; R. E. Bennett, Farm Fertilizers, Inc., Omaha; S. L. Nevins, Olin Mathieson Chemical Corp., Little Rock; W. H. Wilson, Virginia-Carolina Chemical Corp., Richmond; R. C. Wells, National Potash Co., New York; Rene A. Jones, the Anaconda Co., Anaconda, Mont.; J.

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Bankers, County Agents and Dealers to Fill Vital Role in Upgrading Plant Food Practices

WHITE SULPHUR SPRINGS, W.VA.—The viewpoints of a fertilizer dealer, a country banker and a mid-western county agent on the subject of how the fertilizer practices of farmers might be changed, were aired before the National Plant Food Institute convention here June 16.

The dealer should not attempt to perform the function of a money-lending agency, the banker may some-

times have certain reservations in making loans for fertilizers and the county agent needs the backing of others in advising farmers. These were points brought out in the lively discussion led by Dr. A. H. Bowers, Swift & Co., Chicago, chairman of the NPFI Committee on Research and Education. The presentations were informal and were interspersed by frequent questions and comments from the audience.

The program included, in addition to the two panels, an address by Fred C. Scribner, Jr., under-secretary of the treasury; the showing of time-lapse motion pictures on "Watching Fertilizer Work"; and the presentation of awards to farm paper editors who had made outstanding contributions to soil-building.

The convention, attended by more

than a thousand persons representing all segments of the fertilizer industry, was held at this scenic location under ideal weather conditions.

With a background of tougher sales problems and a recognition of need for educating plant food users on the favorable economics of fertilizer application, conventioners were reminded by speakers that factors entering into greater fertilizer sales include adequate financing, better soil testing procedures and an over-all program of education.

How present attitudes of farmers towards fertilizers might be changed for the better was the central topic of discussion of the opening general

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Institute Report Reveals Hard-Hitting Program to Boost Plant Food Consumption

WHITE SULPHUR SPRINGS, W.VA.—A positive, hard-hitting program to boost plant food consumption was revealed in a report of National Plant Food Institute activities made at the annual Institute meeting here. The report was part of a panel discussion on "Changing Farmers' Attitudes Toward Fertilizer."

Discussing activities of the Institute in different regions, reports were made by Dr. Richard B. Bahme, western district representative; Zenas H. Beers, Midwest regional director; Dr. Samuel L. Tisdale, Southeast regional director; Dr. Robert L. Beachner,

Southwest regional director; Dr. Willard H. Garman, Northeast regional director, and F. Todd Tremblay, Pacific Northwest district representative. W. R. Allstetter, vice president of the Institute, introduced the panel members.

"Adverse weather is one of the most difficult environmental factors the farmer must face," Dr. Bahme said. "The National Plant Food Institute is supporting research to show how fertilizer may help the farmer combat adverse weather."

He pointed out that "sound research on range fertilization where moisture is restricted to natural rainfall in arid areas of the West, already indicates how fertilizer improves water use and greater forage. Fertilizer may also improve growth of plants at low temperatures when nutrients may become limiting."

"Additional research is needed to develop new fertilizer markets," he emphasized. "The Institute is supporting research in forage fertilization and forest tree nutrition. More research is being done to show improved quality as well as quantity of crops with proper fertilization."

Dr. Bahme said that "there is a growing recognition in the West that fertilizer is one of the most important

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session on June 16. With John A. Miller, Price Chemical Co., Inc., Louisville, Ky., Institute president, in charge, the program included many ideas on what can be done and is being done toward this end.

An introductory presentation by Dr. M. S. Williams, chief agricultural economist of the Institute, showed by means of visual figures on a chart what needs to be done to correct misconceptions held by farmers on fertilizer.

Elimination of the barriers that prevent the farmer increasing his use of fertilizers was stressed by Webster Pendergrass, dean of the College of Agriculture, University of Tennessee, who reminded that the application of fertilizer is only one of a number of ways in which the farmer might increase his income.

The colleges, he told the convention assembly, can present simple, clear, concise information, tailored to fit the specific situation as regards the needs of growers.

"The lack of knowledge on the part of farmers, as revealed in recent surveys made by NPFI," he said, "shows that the colleges should take a new

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Urea Capacity Set At 623,000 Tons

**1957 Output Shows
15% Gain Over 1956**

WASHINGTON—The annual capacity last Jan. 1 for production of urea in the U.S. was 623,100 short tons, and additional facilities reported under construction and planned for completion in 1958 and 1959 will bring the total to 795,800 tons, according to the Business and Defense Services Administration, U.S. Department of Commerce.

Capacity at the beginning of this year comprised nine plants, and new facilities will include three additional plants plus expansion of three existing installations. All 12 of the present or projected urea facilities are or will be at anhydrous ammonia establishments.

The report on urea appears in the current issue of Chemical and Rubber, monthly publication of the Business and Defense Services Administration. It was prepared by C. Kenneth Horner, inorganic and agricultural chemical branch, chemical and rubber division.

The 1957 production of urea was 15% over that in 1956 and represented 75 to 80% of capacity. Prospects for further growth in output during 1958 are favorable, although most of

(Turn to UREA REPORT, page 2)

CONVENTION COVERAGE

Coverage in this issue of Croplife of the National Plant Food Institute convention is by Lawrence A. Long and W. E. Lingren, of the Minneapolis office, and James W. Miller, New York.

UREA REPORT

(Continued from page 1)

the projected new facilities are not scheduled for completion until late in the year. Approximately 318,000 tons of ammonia were consumed in 1957 production of urea.

Data on use distribution of urea refer only to that domestically produced. Details for the various uses other than fertilizer (see accompanying table) are limited in order to avoid disclosure of individual company operations.

Fertilizer use of urea increased from 47% of total distribution in 1956 to 52% in 1957; all categories of fertilizer use expanded, with solutions making the greatest gain, 57%. Tonnagewise, 1957 use of urea as solutions exceeded the quantities of solid urea used for direct soil

application; the latter showed the largest use in 1956.

The 110,300 tons of urea reported distributed as solutions in 1957 may not represent the entire amount used in this form, as several companies are believed to be purchasing solid urea for the manufacture and distribution of ammoniating solutions. Respondents to the BDSA questionnaire (primary urea producers only) were requested to report the form in which the urea was sold or used by them. Consequently, the reported tonnage of solid urea may be somewhat higher and that of solutions lower than in the respective amounts ultimately consumed in each case.

The separation of urea solutions into those used for direct application and those for ammoniation of mixed fertilizers cannot be shown, the report stated. The greater proportion was used for making mixtures, however.

The opposite was true with respect to solid urea, as indicated by the data in the accompanying table. It will be noted that the combined tonnage of solid urea used for fertilizer in 1956 as reported to BDSA is lower than the total sales of solid fertilizer urea published by the Tariff Commission. The difference is believed to be due to exports, which in this report are included with "other uses." Apparently urea exports also include some industrial grades as well as the fertilizer grade.

Non-fertilizer consumption of urea showed an 8% growth in 1957 over 1956, a considerably smaller increase than reported for fertilizer use.

Imports of urea, predominantly from Norway, West Germany, United Kingdom and Italy, declined from 70,274 tons in 1956 to 59,241 tons in 1957, reflecting the increasing domestic supply. Imports and exports of urea were virtually in balance in 1957. With the addition of imports to domestic distribution, total supplies of urea for 1956 and 1957 increased by 23% to 457,800 tons and 565,400 tons, respectively. Although imported urea is recorded as fertilizer material, it is not definitely known whether all of it is actually consumed for that purpose.

Projected expansion in urea capacity, scheduled for completion by early 1959, will provide sufficient supplies to permit a 58% increase over the 1957 level of supply.

A continuation of the downward trend in imports of urea from Europe is probable. However, Canada will soon have a plant at Hamilton, Ontario, and much of its output probably will be exported to the United States.

U.S. Capacity, Production, and Distribution of Urea by Use, 1956-57

	1956	1957
Capacity, end of year	**	623.1
Production	424.0	488.7
Distribution, total*	387.5	466.2
Total fertilizer use	180.5	243.1
Solid urea for direct application	88.3	101.0
Solid urea for fertilizer mixing	21.9	31.8
Urea solutions†	70.3	110.3
Other uses	207.0	223.1
Animal feeds	‡	44.1
Other domestic consumption	‡	99.0
Exports	‡	60.0
Production not accounted for	36.5	22.5

*Domestically produced urea only.
†Includes urea solutions for both ammoniation of mixed fertilizers and direct application.
‡Breakdown is not shown in order to avoid disclosure.
**Not available.

RECEIVES HONORARY DEGREE

NEW HAVEN, CONN.—James G. Horsfall, director of the Connecticut Agricultural Experiment Station since 1948, received an honorary doctor of science degree from the University of Vermont, Burlington, June 15. The degree is awarded in recognition of Dr. Horsfall's contributions to agriculture, industry, and science in the field of plant pathology.

St. Paul, Richmond Farm Editors Win Institute Awards

WHITE SULPHUR SPRINGS, W.VA.—Dr. Paul D. Sanders, editor of "The Southern Planter," Richmond, Va., and Berry H. Akers, editor-in-chief, "The Farmer," St. Paul, were presented awards for "superior journalistic contributions toward the building of the soils of our nation" by the National Plant Food Institute at the group's annual convention here June 17.

Mr. Sanders and Mr. Akers were winners in the Institute's nationwide "Soil Builders Award for Editors" contest in a field of 34 magazine entries. The contest was established in 1952, with the approval of the American Agricultural Editors' Assn.

Dr. Russell Coleman, executive vice president of the Institute, presented the awards.

Judges for the contest were six leaders in the fields of agriculture and business. They were James Wall, president, National Vocational Agricultural Teachers' Assn., Inc., Waverly, Neb.; Roger Fleming, secretary-treasurer, American Farm Bureau Federation, Washington, D.C.; Nolen J. Fuqua, president, National Association of Soil Conservation Districts, Duncan, Okla.; Wesley Hardenbergh, vice chairman of the board, American Meat Institute, Chicago, Ill.; Marion Bunnell, president, National Association County Agricultural Agents, Newsom, master, the National Grange, Washington, D.C.

Scrolls signed by the national judges were awarded Mr. Sanders, representing the winner among magazines of more than 300,000 circulation and to Mr. Akers, representing magazines of less than 300,000 circulation. The award to Mr. Akers was accepted on his behalf by W. H. Kircher, managing editor of "The Farmer," who also is president of the American Agricultural Editors' Assn.

Farm magazines entered in the contest represented a total readership exceeding 30,000,000.

Dow Change

MIDLAND, MICH.—Walter J. Truettner has resigned as manager of the Detroit sales office of the Dow Chemical Co. and has been succeeded by Eugene J. Quackenbush. It was announced by Donald K. Ballman, director of sales. The Detroit office services markets throughout Michigan.



Theodore A. Gaden

CIRCULATION MANAGER—Theodore A. Gaden has been named circulation manager for The Miller Publishing Co., Milton B. Kihlstrum, president, has announced. He will be in charge of circulation for the seven Miller business publications: The Northwestern Miller, Milling Production, The American Baker, The Northwestern Miller Almanack, Feedstuffs, Croplife and Farm Store Merchandising. Mr. Gaden previously was subscription manager for the Gulf Publishing Co., Houston, Texas.

Utah Area Battles Stink Bug Outbreak

SALT LAKE CITY—Intensive spraying operations are being carried out in southern Utah's Washington County and other Utah areas to combat the worst outbreak of stink bugs since 1952.

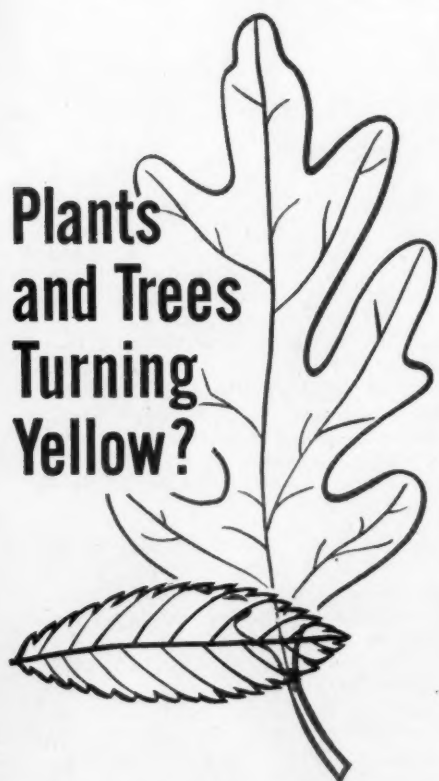
More than 1,000 acres of grain and 174 acres of beets have been sprayed in Washington County to halt the bug infestation. Spraying also is being done in Millard, Davis and Uintah counties.

The bugs have attacked sugar beet seed fields and grain crops throughout the infested areas.

Meanwhile beet webworms also are causing concern in the Uintah Basin, eastern Utah and Sevier County, as well as other areas of the state. The webworms destroy beet tops quickly and are difficult to kill.



AT KANSAS CONFERENCE—How to control cattle grubs and other insects affecting livestock was a foremost subject at the recent conference on systemic insecticides held at Kansas State College, Manhattan. Prominent on the program and in planning meeting details were the individuals shown above. They are, left to right, Herbert Knutson, head of the Kansas State College entomology department; Justus Ward, with the insecticide registration section of the U.S. Department of Agriculture; J. W. Cunkelman, chairman of the National Cattle Grub Committee of Livestock Conservation, Inc.; and E. F. Knipling, director of entomological research for the USDA. Researchers from as far away as Germany and Belgian Congo reported their experimental results and discussed problems arising from the use of these materials. A story of the conference appeared on page 9 of the June 16 issue of Croplife.



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INSECT, PLANT DISEASE NOTES

USDA Urges Rapid Action to Prevent Major Grasshopper Damage in West

WASHINGTON — Rapid action, along lines already laid down for the cooperative state-federal attack against grasshoppers in five western states, should prevent major damage to ripening wheat crops in the area, the U.S. Department of Agriculture said June 13. Full cooperation by stockmen, farmers, and state and local officials is essential for the success of this program, the department said.

Some 10 to 12 million acres in Colorado, Kansas, Oklahoma, New Mexico and Texas are considered

generally infested. About 70 counties in these states are affected.

The urgency of the situation has increased during the past few days because the grasshoppers are fast reaching maturity. However, the department's Agricultural Research Service said that prompt treatment of 3 to 3½ million acres of range, idle and waste land, including roadsides and field margins, should afford a high degree of protection to wheat and other crops throughout the infested area.

Only minor crop damage has oc-

curred so far. The wheat harvest in Texas and Oklahoma is in full swing, and no material damage to the crop in those states is expected. In Kansas, field margins are still green and few of the insects have moved from them onto cropland.

Most urgent phase of the program is the spraying of insecticides along roadsides and margins of cultivated fields and on other waste or idle land near crops. Work is getting under way in most of the areas immediately threatened, including extensive spraying by farmers and ranchers on their own property where hoppers have invaded the fields.

More than 400,000 acres of Colorado field margins, roadsides, and the waste areas will probably need spraying to prevent migration of grasshoppers onto crops and ranges, USDA estimates.

Spraying of roadsides and idle and waste land in Kansas, totaling about 160,000 acres, is under way to protect crops threatened in 27 counties in that state.

To aid in roadside spray operations, USDA will use a total of 20 mistblower units in Colorado and an additional 14 machines in Texas and Oklahoma. These units are supplemented by ground equipment mobilized by the states and counties and by farmers. Roadside spraying in Kansas, now estimated to involve some 30,000 miles of roads, is being done with small planes under contract and with state and county ground equipment.

Range treatment needed in the 15 panhandle counties of Texas infested by grasshoppers is expected to run close to 1 million acres.

In the 21 Colorado counties with serious grasshopper infestations, USDA estimates that at least 1 million acres of range may need treatment. Contracts have been let for spraying a total of 360,000 acres. As of June 12, some 33,000 range acres had been sprayed in this state.

About 160,000 acres of range in Union County, New Mexico, and two to three hundred thousand acres each in Oklahoma and Kansas are likely to require spraying, the department estimates.

Under existing agreements, USDA pays for one-third the cost of treatment on range, idle, and waste land, and the remaining two-thirds of the

cost is borne by the states and individual farmers. USDA does not share the cost of treating cropland. Insecticides currently in use are aldrin, dieldrin, and heptachlor.

The following state-by-state summary indicates the present extent of critical areas:

State	Counties involved	Acres currently needing treatment
Colorado	21	At least 1,000,000 acres of rangeland; 400,000 acres of roadsides and idle or waste land.
Kansas	27	200-300 thousand acres range; 160,000 acres roadsides and idle or waste land.
Oklahoma	6	200-300 thousand acres range; about 100,000 acres roadsides and idle or waste land.
Texas	15	Close to 1,000,000 acres of rangeland; 200,000 acres or more of roadsides and idle or waste land.
New Mexico	1	160,000 acres of rangeland, plus roadsides, idle and waste land not estimated.
Totals:	5 states 70	3-3½ million acres.

Grasshopper Danger Growing in California

SACRAMENTO — The California Department of Agriculture reports the grasshopper danger in California is developing rapidly, bearing out predictions of a serious 1958 infestation made last fall.

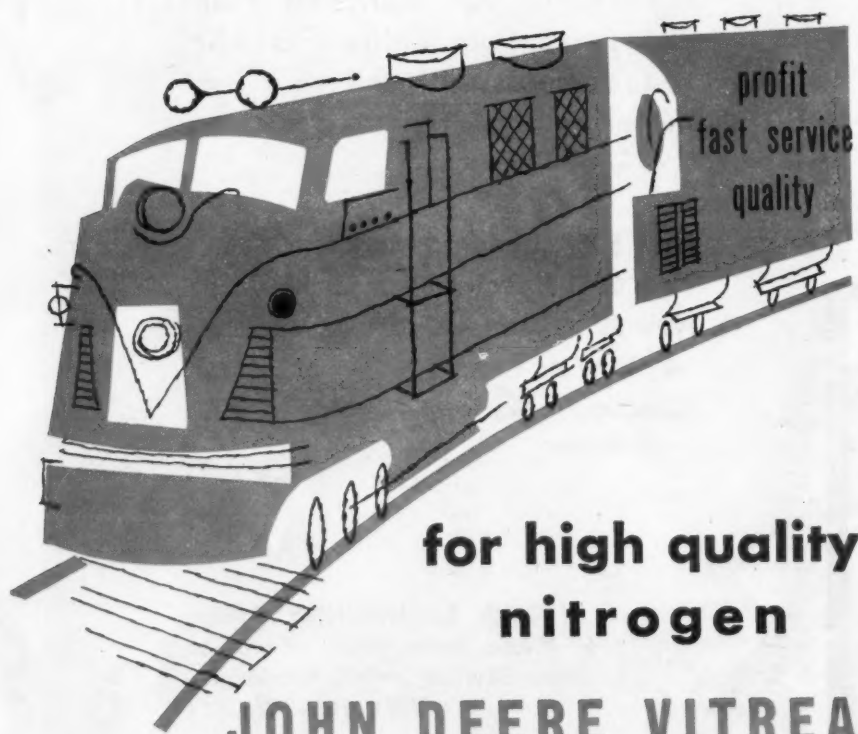
Robert W. Harper, chief of the department's Bureau of Entomology, said that from the mountain meadows of San Diego County to the rangeland areas of Shasta County, the entire north-south span of the state, nymphal populations of several rangeland grasshopper species are threatening cultivated plantings.

Along a 22-mile front east of Arvin and Edison in Kern County, maturing grasshoppers are on the move, crossing dry native grasslands toward cultivated plantings. Barrier spray applications are planned to halt such migrations and prevent serious loss to potato, cotton, alfalfa and other valuable crops.

From Strathmore in Tulare County to Orange Cove in Fresno County, a serious outbreak situation threatens citrus acreage and other plantings. An organized, community control program is posed for action as migrational movement commences.

Further north along the Yuba-Placer-Nevada county line, populations, measuring in some instances 70 and more grasshoppers per square yard, threaten isolated permanent pasture plantings. The U.S. Army will assist in the solution of this problem by contributing to treatment require-

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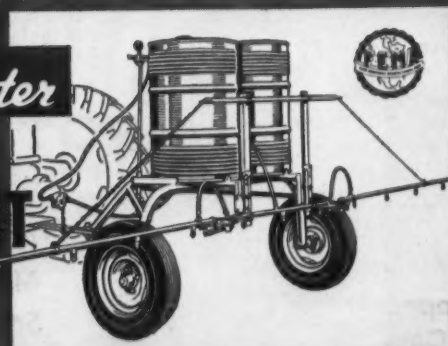
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ments. Camp Beale is in the infestation area.

In the Livermore area of Alameda County, vineyards are endangered while yard plantings in the Soughouse area of Sacramento County and fruit plantings in the English Hills of Solano County are under attack.

Grasshopper numbers, ranging from 25 to 125 per square yard, are widespread in Butte County, from Thermalito south to Bangor, and pose a threat to olive and fruit acreage, alfalfa and other crops.

The Oakrun area of Shasta County reportedly is supporting hoppers in excess of 200 per square yard, the heaviest concentration yet recorded in the state. Other problem areas exist at Project City, Centerville, Bella Vista and Milville. Aircraft are being used for the first time in that area to lay down barriers of poison bran.

Quarantine Hearing Called in California

SACRAMENTO—W. C. Jacobsen, director of agriculture, has called a public hearing for June 30 in Sacramento to consider amendments to the California Cotton Pests Exterior Quarantine.

The proposals would be directed specifically against the boll weevil and would quarantine all states and districts of the United States, except Arizona and portions of Nevada where the boll weevil is not known to exist.

Pink bollworm, named in present state quarantine laws would no longer be included under the proposed amendments since it is now covered by U.S. Department of Agriculture quarantine, Mr. Jacobsen said.

Insect Control in Spotlight in Mid-South

MEMPHIS—Heavy showers during the past week have just about solved the moisture problem in the Mid-South and most farmers are turning their attention to insect control programs.

Reports of boll worm infestations in the delta area of Mississippi are coming in while several counties in Northeast Mississippi report the presence of boll weevils. John King, Lafayette County agent, says poisoning has started for lice, thrips and boll weevils. The rain, Mr. King says, solved the moisture problem for cotton, corn and soybeans. Planting of sorghum for silage and grain sorghum is in full swing. W. R. Cain, Scott County agent, says some farmers have started their boll weevil control programs and that cotton prospects are good.

Southeast Missouri farmers are changing their minds about plowing up late planted cotton in favor of soybeans after the rain. W. F. James, Pemiscot County agent, said, however, that the cotton which didn't get the rain "isn't looking so well."

C. A. Vines, Arkansas Agricultural Service associate director, commented that the showers raised the hopes of farmers for this year's crops. Mr. Vines says early corn has been "laid by" in the southern part of the state and the peach harvest is starting now. Rice and soybean planting has been completed in most areas.

Herbert Russell, Craighead County agent, reported rice and soybeans making good headway in his county although a few soybeans stands were poor because of low moisture. And in Mississippi, Poinsett and Crittenden counties, some farmers have diverted cotton acreage to soybeans and sorghum.

Hoppers Climb Stems To Cool Off, Research At California Shows

BERKELEY, CAL.—On scorching summer days, grasshoppers climb up stems of grass and other plants to take advantage of the natural "air conditioning." This is the observation of University of California entomologists, who recently checked tempera-

tures at 32 different locations above and below the ground in a foothill area.

In the duff or ground cover, they recorded mid-day temperatures as high as 120° F.—hot enough to kill most grasshoppers. But at the same time, temperatures only two inches above the ground were as much as 35° cooler.

This temperature difference, says entomologist W. W. Middlekauff of the Berkeley staff, may help to explain why grasshoppers eat more during a cool summer.

When temperatures climb, the grasshoppers climb with them in order to survive. Instinctively they adapt to conditions where no shade is available. But as long as the insects are perched up on stems, waiting for relief from the heat, their feeding activities appear to be sharply curtailed.

The temperature tests are part of a comprehensive study of environmental conditions in northern Califor-

nia grasshopper breeding areas. The entomologists—through checking of rainfall, wind velocity and direction, humidity, and temperature—hope to learn more about the factors affecting grasshopper emergence, migration and population levels.

P. E. Bastien Heads Quebec Fertilizers

LE GITE, QUEBEC—P. E. Bastien, Quebec district sales manager of the fertilizer and feeds division of Canada Packers Ltd., Montreal, was elected chairman of Quebec Fertilizers Inc. at the annual meeting of the organization here.

Other officers elected were: vice president—George R. Blais, assistant Quebec district sales manager, agricultural chemicals division, Canadian Industries Ltd.; executive director—Ronald Olivier, general manager, William Houde Ltd.; secretary-treasurer—L. E. Whitworth, International

Fertilizers Ltd.; agronomic committee chairman—Jean Leclerc, Canadian Industries Ltd.; advertising committee chairman—Réal Roy, Canada Packers Ltd.

Price to Continue

NEW YORK—Nitrogen Division, Allied Chemical Corp., has announced prices of Arcadian nitrogen solutions and anhydrous ammonia for fertilizer manufacturing use in effect for the period Jan. 1 to June 30, 1958, will be continued through Dec. 31, 1958. Delivered cost will be equalized against competitive producing points, the announcement added.

APPLE PLANTINGS NEEDED

BURLINGTON, VT.—Vermont apple growers must plant at least 3,600 new trees each year if they wish to maintain their present position in eastern markets, C. Lyman Calahan, University of Vermont extension horticulturist, warns.

New sales builder!

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SUPER SOIL PREPARATION

LONDON—The Russians claim to have discovered a soil preparation that will produce carrots 3 ft. long and cabbages 5 yards wide, according to an Associated Press report. They didn't say how the monsters taste. The Moscow radio quoted Prof. Mikhail Shemyakin, an organic chemistry authority, as saying the secret is in hibberelines—fungi with a fantastic capacity to stimulate growth. Prof. Shemyakin said five grams (0.176 of an ounce) of the fungi strains spread over one hectare (nearly 2½ acres) is enough to obtain giant vegetables. "Moreover," he added, "they cut the vegetation period from months to weeks, thus making it possible to introduce farm crops in both the extreme north and deserts."

Cotton Mechanization Conference Planned

BROWNSVILLE, TEXAS—The program of the 1958 Beltwide Cotton Mechanization Conference will combine news of latest developments in mechanization with tours of cotton facilities on the United States and Mexican sides of the border.

The conference will be held in the civic auditorium here Aug. 12-14. Sponsor is the National Cotton Council, in cooperation with Farm Equipment Institute, U.S. Department of Agriculture, Cotton Belt land-grant colleges, Valley Farm Bureau and other groups.

Topics will include research needs, management, how one farmer me-

chanized and the outlook for mechanization.

High-clearance rigs, nozzles and herbicidal equipment will be covered by a research roundup on ground application equipment for liquid chemicals. Description of pink bollworm work will be followed by a tour of the Pink Bollworm Research Center, a few blocks from conference headquarters. Other subjects include soil conditioning and tooling for in-furrow disease control.

A tour of the Texas Branch Experiment Station at Weslaco and the Mexican Experiment Station at Rio Bravo is scheduled. Other trips will include cotton production and marketing facilities in the Matamoros area.

1957 Super Production, Shipments Show Gain

WASHINGTON—Production of superphosphate and other phosphatic fertilizers during 1957 totaled 2,455,097 short tons (100% A.P.A.), compared with 2,438,766 short tons in 1956, the Bureau of the Census has reported.

Shipments in 1957 amounted to 1,819,828, a gain over 1,703,462 short tons the year before. Production in 1957 included 1,380,009 short tons of normal and enriched superphosphate, 831,510 short tons of concentrated superphosphate, 171,351 short tons of ammonium phosphate and 72,227 short tons of other phosphatic fertilizers, including wet-base goods.

Dr. John Lilly Joins University of Massachusetts

An item in the June 2 issue of Crop-life stated that Dr. John H. Lilly had accepted the position of head of the department of entomology and plant pathology at Amherst College, Amherst, Mass. Actually, Dr. Lilly's new work will be with the University of Massachusetts at Amherst, rather than at Amherst College located in the same city. Dr. Lilly has been with Iowa State College, Ames, for a number of years.



Arlan Woltemath

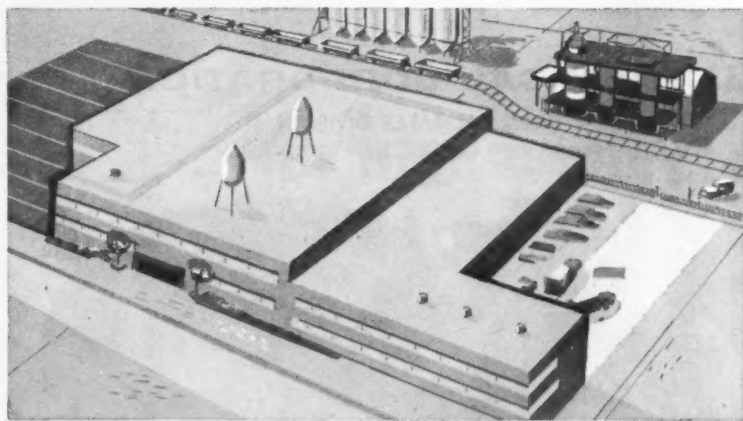
Arlan Woltemath Named NPFI Representative

WASHINGTON—Arlan Woltemath of Kansas City, Mo., has been named a district representative of the National Plant Food Institute, effective July 1. He will report to NPFI's Midwest regional office in Chicago and will work out of Kansas City. The appointment of Mr. Woltemath was made by Dr. Russell Coleman, executive vice president. Mr. Woltemath, who has been a district agronomist for Spencer Chemical Co. since 1955, will work in the states of Missouri, Kansas, Nebraska and Iowa, where he will be concerned with NPFI's expanding program of research and education.

Mr. Woltemath was born and raised on a farm near Sterling, Neb., and received his bachelor of science degree in technical science from the University of Nebraska College of Agriculture in 1954. His undergraduate work at the university was interrupted by two years service with the United States Air Force. He received his M.S. degree in soils from the university in 1955. His master's thesis was entitled "Authentication of Various Methods for Determining the Nitrogen Status of Nebraska Soils." His personal and business address will be 321 Ward Parkway, Kansas City, Mo.

SOMETHING NEW...

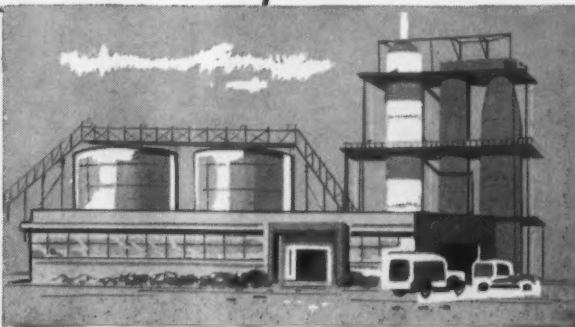
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Western Agriculture



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A. R. Maas Chemical Co. South Gate plant.

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The Standard Oil salesman who calls on you to sell Nitrogen Solutions has the experience to work with you in the purchase of these products—and he has the plant and facilities to deliver what he sells.

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You expect more from



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PCA Strikes Potash Zone at 3,303 Ft. In Canada Shaft

SASKATOON, SASK.—After 2½ years of shaft sinking, Potash Company of America, Ltd. struck a potash zone at the 3,303 ft. level here June 14, according to F. O. Davis, managing director of PCA, Ltd. The new Canadian enterprise, reported earlier in Croplife, is expected by PCA to be ready for production by the end of 1958.

Although potash ore was struck at the 3,303 ft. depth, Mr. Davis explained that the operating depth will be at the 3,330 ft. level, and an additional 100 ft. is expected to be added to the mine depth to provide working room and space for storage and equipment.

Above ground, construction on the

mill is progressing, Mr. Davis reports, and may be completed in September of this year. Because of the complexity of developing the underground facilities, however, actual production is not expected to begin until probably December.

As previously announced, PCA anticipates production of some 600,000 tons of muriate annually from the Canadian mine, and activities will be carried on both in Saskatchewan and New Mexico concurrently. PCA has set the cost of its Canadian operation at \$20 million.

CSMA PROCEEDINGS

NEW YORK—The proceedings of the forty-fourth annual meeting of the Chemical Specialties Manufacturers Assn. has been published. Copies may be obtained from the association, 50 E. 41st St., New York 17, N.Y., at a cost of \$7.50 per copy in the U.S. and Canada, and \$8 per copy to other countries, postpaid by regular postal service.

Maine ASC Issues Fertilizer Bid Call

ORONO, MAINE—The Maine State Agricultural Stabilization and Conservation Office has issued invitations to bid for the purpose of establishing a source of supply for superphosphate and mixed fertilizer. Deadline is 2 p.m. June 30.

Lawrence A. Chatto, administrative officer, Orono, said that the fertilizer is to be furnished in "such quantities as may be required in the state of Maine during the period from date of award through Oct. 31, 1959." He said that it is estimated that 2,500 tons of superphosphate, 2,500 tons of 0-14-14, 0-20-20 or 0-15-30 and 10,500 tons of 8-16-16 will be required during the contract period.

NEW FERTILIZER PLANT

MANTECA, CAL.—The Guthmiller Fertilizer Co. recently went into operation here.

Miller Chemical Purchases Ramsburg Fertilizer Factory

BALTIMORE—Miller Chemical and Fertilizer Corp., Baltimore, has announced the purchase of the Ramsburg Fertilizer factory in Frederick, Md., and plans to begin manufacturing of its complete line at the new facility by July 1.

Available from the Frederick location will be Miller bagged and bulk fertilizers, liquid fertilizers, insecticides and agricultural chemicals. Sale of Miller products, as well as soil testing, insect counts and general customer servicing from the Frederick location will be handled by Gary W. Bell, district manager in charge of sales and production, and by Clayton P. Hackman.

The Miller corporation adds its sixth facility with the addition of the Ramsburg plant at Frederick. Other plants are located at Baltimore, Whiteford and Salisbury, Md., and at Hanover and Ephrata, Pa.

Official 1958-59 Grades For Virginia Announced

RICHMOND, VA.—Fertilizer grades adopted for 1958-59 in Virginia have been announced following a public grade hearing held here early this month.

Changes adopted for the next fiscal year are:

0-9-27 was added for general crops; 0-20-10 was added to replace 0-16-8 for general crops; 5-10-15 tobacco only was added to replace 6-12-15 tobacco; 20-10-15 starter solution or foliar spray was added to replace 19-52-17; deleted were 0-16-8, 12-12-12, 13-13-13, 14-14-14, 4-12-8, 4-16-8, 6-12-15, 6-12-4 and 19-52-17.

Registrants or manufacturers may dispose of present inventory of deleted grades through next Dec. 31.

The complete list of ratios and grades approved for sale in the state during the fiscal year starting next July 1 is as follows:

0-1-1 ratio—0-14-14, 0-20-20 and 0-30-30; 0-1-2 ratio—0-10-20, 0-15-30 and 0-20-40; 0-1-3 ratio—0-9-27; 0-2-1 ratio—0-20-10 and 0-40-20; 1-0-1 ratio—14-0-14 and 20-0-20; 1-1-1 ratio—8-8-8 and 10-10-10; 1-2-1 ratio—5-10-5 and 10-20-10; 1-2-2 ratio—5-10-10 and 10-20-20; 1-3-3 ratio—4-12-12; 1-3-4 ratio—3-9-12; 1-3-6 ratio—3-9-18; 1-6-6 ratio—2-12-12 and 3-18-18; 3-4-3 ratio—6-8-6; 5-3-2 ratio—10-6-4;

The following grades for tobacco fertilizer only: 1-0-3 ratio—8-0-24; 1-3-3 ratio—3-9-9; 1-5-4 ratio—2-10-8; 2-4-5 ratio—4-8-10; 1-2-3 ratio—5-10-15.

For use only as tobacco plant bed fertilizer: 4-9-3 ratio—4-9-3.

For use only as starter solution and foliar spray fertilizer: 20-20-20, 12-36-12, 19-22-16, 10-52-17 and 20-10-15.

William B. Spargur In New Delavan Post

DES MOINES—Delavan Manufacturing Co., West Des Moines, Iowa, has announced the promotion of William B. Spargur to sales manager of the agricultural and industrial sales division. He previously was assistant sales manager for these lines.

Mr. Spargur's new responsibilities include complete supervision of sales activities in the U.S. and foreign markets for Delavan's agricultural and industrial processing nozzles and accessories.

EXTENSION OFFICIAL HONORED

NEW BRUNSWICK, N.J.—Lindley G. Cook, associate director of Rutgers University's Agricultural Extension Service who will retire July 1, was honored by the New Jersey Pest Control Assn. recently. The group noted Mr. Cook's efforts to bring about closer relations between county agents and the pest control operators. Mr. Cook was made a life member of the association.



If you had a "pesticidal snerk"

... a cuddly household pet whose non-toxic exhausts of "hydrogenated pentophoschlora-phene" would kill all crop and soil pests—then your pest control problems would be over. Until such a marvelous creature comes along, however, your best bet is still the local Mathieson dealer and the full line of approved pesticides he always has in stock.

Mathieson fungicides, herbicides, and insecticides—dusts or sprays—are all completely

tested in the laboratory and in the field... carefully formulated for maximum effectiveness at minimum costs.

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Missouri Gets NPFI Grants to Continue Pasture Demonstrations

WASHINGTON — Grants totaling \$1,420 have been provided this year by the National Plant Food Institute to help support pasture fertilization demonstrations in Missouri.

The on-the-farm demonstrations are under the supervision of John Falloon and Marshall Christy, University of Missouri extension soils specialists. The program was begun in 1956, aided by Middle West Soil Improvement Committee grants.

The 1958 demonstrations will include maintenance fertilizer applications on previously renovated pastures which had received treatments respectively in the spring and fall of 1957.

In these 1957 demonstration plots covering two to three acres each, one third of the renovated pasture received 90 lb. of nitrogen fertilizer. Another third received fertilizer containing 90 lb. each of N, P₂O₅ and K₂O. The remaining third was left unfertilized for check purposes. The same treatments are being made in 1958, with these variations:

One half of the plot area which last year received the 90 lb. N treatment will receive the same application, while the other half will not. The same procedure is followed on the plot that last year received the 90-90-90 application. One half of last year's unfertilized check area will receive 90 lb. of N; the other half will get a 90-90-90 application.

Thus there will be an opportunity: (1) to study the response of the renovated pasture to retreatment or maintenance applications of fertilizer; (2) to check the carryover effect on last year's fertilized plots which received no treatments this year; (3) to check the results from an original nitrogen application and also from a 90-90-90 application on the respective areas of the check plot which were unfertilized last year.

Mr. Falloon pointed out that a good deal of money was spent originally in renovating the rundown pastures and building them into profitable, high-yielding production. The present fertilizer treatments are designed to maintain these pastures in a high state of production.

"We found originally that we could double or triple pasture yields by renovating and fertilizing according to soil tests," he said.

"In the present demonstrations we have found that adding maintenance applications of fertilizer has given yield increases of 50% or more on the previously renovated pasture." The need for pasture renovation in Missouri, he added, is indicated by the fact that 9 million acres out of the present 11 million acres in pasture land need renovation.

Missouri Council to Continue Dealer Sessions

COLUMBIA, MO.—The success of a series of winter fertilizer dealer meetings has prompted the Soil Fertility and Plant Nutrition Council of Missouri to plan to continue and expand them for next year.

Approximately 100 dealers in January and February attended meetings in Chillicothe, Warrensburg and Mt. Vernon. Dealers attended a session each week for four consecutive weeks. The whole project was a pilot experiment by the dealer education committee of the council.

The Fertilizer Dealer and His Role In Educating the Farmer

By Al P. Nelson
Croplife Special Writer

An Illinois dealer who has a thriving fertilizer business states that "we do not need to educate the farmer any more concerning the benefits of using adequate amounts of fertilizer to produce bumper, profitable crops. They know this. They have attended many educational meetings in the past, staged by us and other dealers and county agents. They have seen slides and films giving evidence of the productivity of good fertilizer. They have also viewed films of many test plots showing how lack of fertilizer held back certain portions of the crops."

This dealer went on to say that as a result he is holding only one fertilizer education meeting a year—in spring. This is a natural time

for farmers to buy. He looks on his fertilizer educational meeting as a place to take orders for seeds, fertilizer and other items—an excuse for getting farmers together.

However, an Iowa dealer, in a prosperous corn producing area, said, "Forty per cent of the farmers in Iowa do not use any commercial fertilizer, according to a state agricultural college survey. That means we've got a tremendous educational job ahead of us out here. Perhaps dealers are farther ahead on this score in Illinois, but I hate to think of what would happen to our tonnage in this area if we didn't keep hammering home the advantages of proper fertilization for bumper crops."

Thus it goes from one section of

the country to another. It can be said, however, that very few dealers feel that the ultimate in educational programs has been reached. Here and there may be a dealer who because of previous educational work and a hard hitting merchandising program, is getting all the business he can handle. In such cases now and then, the dealer may feel that there is no longer any need for educational work. However, if, for one reason or another, his volume would suddenly start to dip, even such a dealer may suddenly decide to pep up his educational program in the hopes of getting more sales.

It would seem to be wise—after visiting literally hundreds of fertilizer dealers in recent years throughout the U.S.—that no dealer is going wrong when he sets up a permanent educational program on fertilizer, and also on farm chemicals.

It has been said that the public forgets quickly. So does the farmer. You have got to keep reminding him that fertilizer is an investment not an expenditure. When he buys fertilizer and puts it into his soil, he gets more back—conditions being normal—than what he puts in.

The phrase "3 in 1" is generally thought of as applying to a popular make of lubricating oil, but the "\$3 for \$1" as applied to fertilizer investment should not be forgotten by fertilizer dealers. It will help sell more of the product. A farmer will think twice if he regards his fertilizer as an investment rather than an expense.

The fertilizer dealer has so many effective educational means at his disposal that it is very difficult to think of another industry which can compare in this respect. Let us list just a few of these promotional means:

1. Color slides of crops and the results of fertilizer or no fertilizer. Can you name one other retail field that is using color slides of its products and the use of them as is the fertilizer industry? When a fertilizer dealer announces that he is going to show color slides of his customers' crops that have been fertilized and those which have not been, he usually has no difficulty in getting a fine turnout.

Farmers currently are interested in such slides. They like the color, and they can see clearly in growth of crops and in the harvest baskets the difference between production on fertilized and unfertilized land. The slides sell fertilizer, often more effectively than does a salesman. Farmers believe what they see on the colored slides. They do not always believe when the salesman tells them the same thing.

Now the novelty, the lure of colored slides to illustrate and to sell, may fade. Therefore, dealers who are wise should make use of this traffic-building interest while they can.

2. Fertilizer dealers, fertilizer companies, farmers, county agents and many other people interested in agriculture are vitally interested in crop

(Turn to DEALER ROLE, page 13)

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor



Seeds have always been a major line of Turner Seed & Supply Co., Mattoon, Ill., but it hasn't been until recent years that fertilizer has also become a main line which ties in well with the firm's other trade. Owners of the firm were formerly in the implement business but when it was decided to drop implements the replacement product was fertilizer.

Bulk fertilizer is housed in the firm's warehouse at Mattoon and bags are displayed in the farm supply store. Feeds, paints, motors and a full line of farm chemicals are other important lines.

All products, except bulk fertilizer, are displayed in a separate building which formerly was the farm implement display room. The walls and floors are newly painted and merchandise is shown well on locally built islands. C. C. Turner, the father, and his sons, Charles and Bruce, who are with him in the business, think they have a good sales building combinations now in these various lines.

"We've really got a farm supply store for the most part," says Bruce Turner, "although our largest volume is and has been in seeds. However,

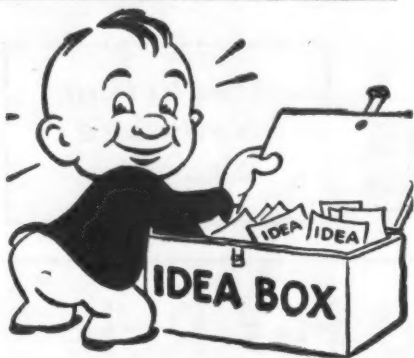
in the new store we are going after the sale of related needs of the farmers. And farm chemicals go well with the fertilizer line."

The firm has a full time salesman who travels the area to sell fertilizers and other products. In this way, the firm renews its contracts with farmers regularly and

(Turn to OVER THE COUNTER, page 11)



HEADQUARTERS—The bulk fertilizer storage building and the seed building of the Turner Seed & Supply Co., Mattoon, Ill., are shown in the above photo. Bagged fertilizer and farm chemicals are displayed and sold in the retail sales room housed in the firm's farm supply store (not shown). Seeds, fertilizers, farm chemicals and related farm supplies make up a well-rounded line of supplies for farmers, say owners of the Turner company.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 7063—Vibrator

A new type vibrator to break bridging of materials in storage bins, supply ducts and containers has been developed by the Thayer Scale Corp. Vibration is not applied directly to the side walls of the hopper or duct, but rather to screens which are inserted within the chamber. Various sizes and shapes of vibrators are available. Check No. 7063 on the coupon and mail it to secure details.

No. 6756—'Amino Triazole' Weed Killer

A folder entitled, "For Clean Corn Land—Amino Triazole Weed Killer," has been prepared by the American Cyanamid Co. The product, explains the folder, kills Canada thistle, sow thistle, poison ivy, poison oak, honeysuckle, milkweed, leafy spurge and other weeds. Check No. 6756 on the coupon and mail it to secure details.

No. 6757—Truck Applicator

The Broyhill Co. has announced details of its truck applicator for complete, analysis fertilizer solutions. Company officials state that the unit has been field tested during the past two years. The unit, claims the company, can: Transport one to three

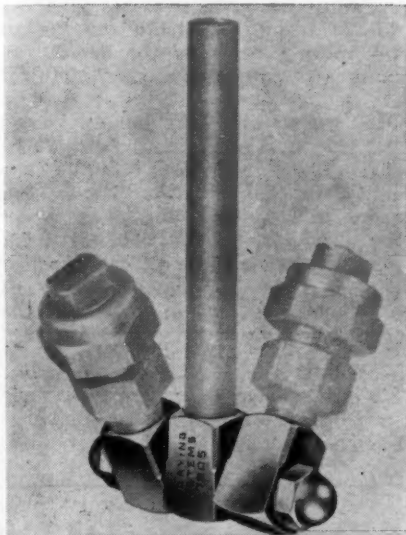
types of solution in the 3-compartment, 1,000 gallon steel tank; be easily and quickly removed from the truck; apply up to 200 acres a day; spray a uniform 30-ft. swath; transfer solution from truck tank to other field applicators; and transfer solution from storage tank to truck tank at the rate of 100 GPM. Secure details by checking No. 6757 on the coupon and mailing it to Croplife. Please print or type name and address.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6751—Swivel Connectors

For setting spray nozzles to any desired angle in row crop spraying, the Spraying Systems Co. has introduced a new line of lightweight, double and single swivel connectors for mounting to drop pipe ends. Connect-



tor bodies are adjusted to any point in a 360° range and are held in position by lock nuts. They are supplied in two sizes as No. 7205 for use with 1/4 in. drop pipes and 1/4 in. inlet connection Tee Jet spray nozzles—and No. 7450 for use with 1/4 in. drop pipes and 1/4 in. inlet connection Tee Jet spray nozzles. For complete information check No. 6751 on the coupon and mail it to Croplife.

No. 6746—Fertilizer Packaging

The use of a full overlap-flap die-cut box for fertilizers and other bulk-pack products is described in information released by the Hinde & Dauch Paper Co. The method has been found successful in packaging 25-lb. packages of fertilizer and it is said to prevent sift and provide a convenient carrying handle. Secure details by checking No. 6746 on the coupon and mail it to Croplife.

No. 6744—Soil Fumigant

Information about the use of "Mylone" soil fumigant which has been granted federal label acceptance by the U.S. Department of Agriculture for pre-planting use on seed beds of certain vegetables is available. The manufacturer of the product is Union Carbide Chemicals Co., Division of Union Carbide Corp. The product formerly was available for use on vegetable seed beds only on an experimental basis. It is now commercially available to growers for pre-planting treatment of tomato, pepper, cabbage, egg plant and lettuce seed beds, the company states. Check No. 6744 on the coupon and mail it to Croplife to secure details.

No. 6754—Rubber-Lined Drums

Specifications for the "series 800" and "series 801" rubber-lined drums of the Industrial Division, Gates Rubber Co., have been outlined in a new leaflet. Dimensions of the drums and other facts are given. Check No. 6754 on the coupon and mail it to secure the leaflet. Please print or type name and address.

No. 6752—Bindweed Killer

Bindweed, Canada thistle, trumpet vine and other broadleaved perennials can be eliminated for a year or longer by one spraying with a new chemical weed killer, "Tryben 200," states the Du Pont Co. The material is based on the dimethylamine salt of trichlorobenzoic acid (TBA) and contains 2 lb. acid equivalent per gallon. It is said to be effective through both contact and residual action. The chemical is non-selective and is formulated as a liquid to be diluted with water for spray application. Check No. 6752 on the coupon and mail it to Croplife to secure details.

No. 6749—Quackgrass Control

The use of "MH-40," trade name of a product for the control of quackgrass, wild onions and to retard grass growth, is described in new literature prepared by Naugatuck Chemical, Division of the United States Rubber Co. The quackgrass control folder includes instructions for use of "MH-40," a table for mixture, advantages, use in the garden and other information. Another folder explains the use of the product to retard grass growth along highways, cemeteries, golf-course roughs, airfields and unused areas. Check No. 6749 on the coupon and mail it to Croplife to secure the literature.

No. 6747—Systemic Herbicide

A folder describing "Amino Triazole" weed killer, a systemic herbicide for perennials, has been prepared by the American Cyanamid Co. The folder states that the product kills Canada thistle, sow thistle, quackgrass, poison oak, cattails, Bermuda grass and various other weeds and grasses. The product also destroys the roots, the folder explains. Instructions for use are included in the folder. Secure it by checking No. 6747 on the coupon and mailing it to Croplife.

No. 6755—Weed Control Product

A new brochure describing "Penco Penite-6X," a product used for control of weeds, trees, stumps, potato tops, aquatic weeds and termites, has been released by Pennsalt of Washington Division, Pennsalt Chemicals Corp. The brochure includes a description of the product, its composition and directions for using it for various controls. Secure the brochure by checking No. 6755 on the coupon and mailing it to Croplife.

No. 6748—Booklet on Materials Handling

Under the title "7 Ways to Cut Costs," a booklet recently published by the Frank G. Hough Co., explains how material handling methods are developed through the versatility of a single machine. The booklet "demonstrates the utility value of interchangeable front end attachments on Payloader tractor-shovels," the company states. Action pictures demonstrate the material handling assignments that can be made to apply to seven attachments. Condensed specifications for two models are included. A free copy of the booklet is available by checking No. 6748 on the coupon and mailing it to Croplife.

No. 7038—Automatic Bag Release

A new automatic bag release converts "G-73 Impackers" (or any bagging scale with a universal air-operated bag holder) to automatic operation, it has been announced by the Richardson Scale Co. The unit is designed for textile and paper wall bags and can be supplied as an optional feature on new equipment or adapted

Send me information on the items marked:

- | | |
|--|---|
| <input type="checkbox"/> No. 6744—Soil Fumigant | <input type="checkbox"/> No. 6754—Drums |
| <input type="checkbox"/> No. 6746—Packaging | <input type="checkbox"/> No. 6755—Brochure |
| <input type="checkbox"/> No. 6747—Herbicide | <input type="checkbox"/> No. 6756—Weed Killer |
| <input type="checkbox"/> No. 6748—Materials Handling | <input type="checkbox"/> No. 6757—Applicator |
| <input type="checkbox"/> No. 6749—Quackgrass Control | <input type="checkbox"/> No. 6758—Residue Booklet |
| <input type="checkbox"/> No. 6750—Drum Literature | <input type="checkbox"/> No. 6759—Movie |
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| <input type="checkbox"/> No. 6752—Bindweed Killer | <input type="checkbox"/> No. 7063—Vibrator |
| <input type="checkbox"/> No. 6753—Preblender | |

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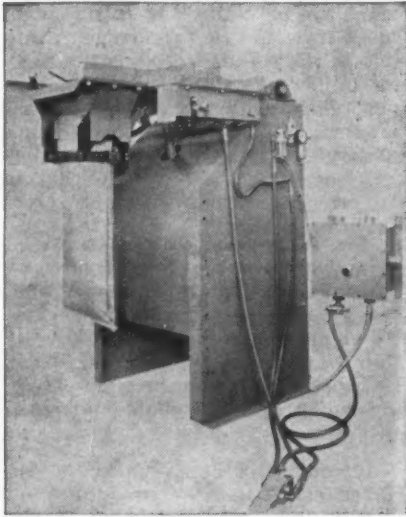
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to "Impackers" and scales already in use. For more information check No. 7038 on the coupon and mail it to this publication.

No. 6758—Pesticide Residue Booklet

Hazleton Laboratories has produced a booklet entitled, "Growers' Service Pesticide Residue Analysis" which discusses residue problems. Instructions and suggestions for using the firm's services are explained. Secure a copy of the booklet by checking No. 6758 on the coupon and mailing it to Croplife.

No. 6753—Preblender

Drawings and literature describing the "preblender-ammoniator-granulator" (patent pending) manufactured by Fertilizer Engineering & Equipment Co., Inc., are available. The company announces that "this new approach to pre-mixing of all materials before ammoniation yields quality product and reduces formation of chloride fumes." Secure further information by checking No. 6753 on the coupon and mailing it to Croplife.

No. 6750—Drum Literature

Vulcan Containers Inc. has prepared two pamphlets describing specifications of drums recently added to its expanded product line. One of the pamphlets reviews the advantages of the 55-gal. tight head "Uni-Drums" which interlock because of slightly offset rolling hoops. The other pamphlet explains the uses and describes the accessories for open and tight head 55-gal. drums, the single and double blade 55-gal. agitator drums, the open and closed head 15-gal. drums, and 100- and 120-lb. capacity open head grease drums. Check No. 6750 on the coupon and mail it to secure details.

No. 6759—Soil Treatment Movie

A new sound-and-color 16 mm. film which portrays how soil fumigation increases crop yields has been produced by the Stauffer Chemical Co. Prints are available on loan, and without charge, to interested agricultural groups. The 12-min. film depicts, in actual field scenes, modern methods of applying liquid soil fumigants such as "Vapam." It also includes a series of problem-and-solution sequences which show how soil fumigation has been used to control pink-root (onions), fusarium wilt (gladioli), oakroot fungus (fruit trees), nematodes (vegetable acreage) and weeds and soil pests in seed beds. One section of the movie portrays how trees planted in fumigated soil grow measurably faster than those set out in untreated soil. Details about securing the film may be obtained by checking No. 6759 on the coupon and mailing it to Croplife.

FIRM DISSOLVING

SACRAMENTO — F. Lagomarsino and Sons, a seed and nursery firm founded in Sacramento in 1916, is dissolving its business.

OVER THE COUNTER

(Continued from page 9)

has a chance to supply them with seeds, fertilizers and farm chemicals.

To clearly mark the new farm supply store, the Turners themselves built a modern identification sign which can be seen for several hundred feet along the highway. The modern sign has a redwood finish and white lettering made of white pine. The background of the sign is green which fits in very well with a farm supply store.

The firm also has a seed cleaner and treater and does a sizable seed volume in the area. Most of the business is in field seeds such as soybeans, hybrid corn, oats and wheat.

"We urge farmers to have their soils tested, and then fertilize ac-

cording to recommendations," says Bruce Turner. "Since many farmers have been buying seeds from us for many years, we are in a good position to get some of their fertilizer and farm chemical volume."

The Turners advertise almost daily on a local radio station using three or four spots daily during the spring and summer. In addition, they usually use the classified ad section of a local newspaper each Friday.

"With the farm supply store we think our business is better balanced than before," says Charles Turner, "and we can get a quicker turnover on much of our invested capital. The farm supply business is a growing one and we want to be in on the ground floor and grow with it."

The Turner buildings, the seed house, the bulk fertilizer storage building and the farm supply store lie along the highway and can easily be seen by highway traffic.

Wisconsin Tests Show Soil Nutrient Lack

MADISON, WIS. — The Wisconsin soil testing laboratory at Madison tested a total of 22,104 soil samples for acidity, phosphorus and potassium during 1957. This was an increase of almost 3,000 samples over 1956. In addition, over 8,000 soil samples were tested for available nitrogen, of which 1,200 were from the Pacemaker Corn Club soils.

Of the soils tested, 45% were deficient in lime, 44% lacked sufficient phosphorus, and 63% needed more potassium. Forty per cent of the samples tested for available nitrogen were found to be short of the 200 lb. per acre that is needed to grow a good grain crop.

Besides the tests run by the state laboratory, tests were run by laboratories in 41 of the counties, and by several private laboratories.



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A PROBLEM with a familiar sound — regular ammoniating solutions just didn't meet the trend to high-nitrogen granular grades. The Sohio men went to work . . . formulated and tested a new solution that met all requirements. In addition, low salting-out temperature made it easy to handle, and recycle rate was low.

Even more important, as Sohio Solution 16, the new solution can help you formulate high-analysis granular grades at lower cost. You'll save by using more of the low-cost nitrogen materials . . . less acid . . . and you'll have more room to use your lower cost phosphates. Sohio Solution 16 is just one example of how you can benefit from Sohio SERVICE . . . and a full line of Sohio nitrogen materials. Call the "Man from Sohio" for details.

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FARM SERVICE DATA

Extension Station Reports

It definitely pays to treat soybean seed with a fungicide before planting, University of Minnesota studies show.

Plant pathologist T. D. Wyllie says trials during the past two years show that soybean seed treated with Arasan fungicide yielded, in some seed-lots, up to six bushels more per acre than untreated seed.

How much it increases yields on individual farms, however, will depend on general growing conditions and seed condition, Mr. Wyllie says. The biggest increase occurs in lots of poorer quality seed. With high

quality seed, there may not be a marked increase from seed treatment.

These trials were conducted on samples of commercial Renville and Blackhawk seed, which had been sent in to the state seed testing laboratory by Minnesota farmers.

Treating kills many disease organisms which may interfere with plant growth.

The advantage from treating may be somewhat less in a good growing year for beans, such as summer, 1957. Also, in these trials, the biggest yield

increases from treating occurred in seed samples having germination below 85 percent.

The treating only costs about 30¢ per acre for materials. But that is a cheap investment when compared to the "insurance" it gives. If it only increased yields by a half bushel per acre, the farmer would still be money ahead, Mr. Wyllie says.

One final point: Treating is especially important in fields which have been raising soybeans continuously for several years, because these fields may have greater populations of disease organisms.

★

Small grains planted on sorghum ground will suffer from a nitrogen deficiency unless they are given an application of nitrogen fertilizer, says soil specialist E. J. Williamson with the Agricultural Extension Service at South Dakota State College.

Mr. Williamson explains that sorghum stubble and sorghum roots,

which are by nature low in this plant nutrient, would tie up nitrogen available in the soil as it begins the process of decomposition, making nitrogen temporarily unavailable to the new crop. "As a result, small grains on sorghum ground suffer a nitrogen deficiency during the early part of the growing season," he states.

Mr. Williamson states this nitrogen would become available later in the growing season, but oats and barley following sorghum will likely be short and yellow, and have a low yield unless the right fertilizer is applied. He recommends from 25 to 30 lb. of available nitrogen per acre.

According to the specialist the fertilizer can either be broadcast and disked under or applied as a top-dressing after the small grain has been planted. If soil tests have indicated a phosphorus deficiency, superphosphate should also be applied prior to seeding at the recommended rate.

★

Agricultural chemicals may break the back of one of the wheat growers' most troublesome problems.

Two systemic chemicals, Thimet and Bayer 19639, have effectively controlled the Hessian fly in two years of testing by researchers at the Michigan State University Agricultural Experiment Station. Systemic materials are absorbed into the plant's system and kill the insect when it bites into or sucks the plant's fluids.

These results are preliminary and must be followed up with more extensive tests, the researchers say. If further tests show the chemicals can be recommended, then Michigan farmers will not have to worry about waiting until after the fly-free date to plant. The early planting date would also mean better establishment of the stand and some farmers could use the wheat for pasture.

In the tests, the chemicals were applied both as a seed treatment and in the row along with the fertilizer in late August and early September. Treated plots showed a range from less than 1% infested plants to 5% infested plants. Untreated areas showed infested plants ranging as high as 18.3%.

The treatment does reduce the stand slightly and slows down early growth. But the plants recover very well and vigor increases after recovery. When a fungicide is added to the seed treatment, damage to stand is reduced considerably and in some cases, almost eliminated.

The residue problem does not appear to be serious as residues disappear in seven or eight weeks after planting.

★

C. S. Walters and K. R. Peterson, forestry researchers of the University of Illinois College of Agriculture, have developed a new chemical mixture that helps home owners destroy stumps by burning. They call their new mixture "Stumpfyre." This combination of chemicals has been patented by the university.

Stumpfyre can be made of the following mixture of powdered chemicals: three parts by weight of cupric chloride, nine parts of sodium dichromate, two parts of lead acetate and two parts of manganese chloride. For use, this mixture is thinned with water to the consistency of thick molasses.

LITTLE RUST DANGER

AMES, IOWA—The Iowa oat crop will escape significant rust damage this year, K. J. Frey, agronomist, and J. A. Browning, plant pathologist, of Iowa State College report. "The chance of rust damage now appears very slight. Oats were planted early and have a head start on rust," Mr. Frey stated.



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DEALER ROLE

(Continued from page 9)

yields as a result of applied fertilizer. Therefore, the above persons and firms steadily accumulate, by intent, a large mass of interesting figures proving that proper fertilization pays.

For the time being at least, the fertilizer dealer can use many of these facts and figures in his newspaper, direct mail and other advertising, and know that the figures hold a great deal of interest for potential customers. Make the most of such interest. It may not always be as high as it now is. When the time comes when many farmers use a great deal of fertilizer, the differences in crop yields from farm to farm may not be as large or challenging as they are today, when smaller amounts of fertilizer are used on some farms.

The wise fertilizer dealer can have small inexpensive brochures printed, containing outstanding examples of crop yields due to fertilizer. These brochures can be handed to farmers from the store or on field calls by salesmen. You never know when the seed you plant in this way may result in a sale of additional fertilizer.

Don't let the farmer forget some of the astounding crop gains that can be made through application of proper amounts of recommended fertilizer. It is your job as a retailer to keep such ideas constantly before him.

3. County agent cooperation. As a fertilizer dealer are you acquainted with your county agent? Are you acquainted with the agricultural teachers in high schools in your trade area? These men are interested in the use of fertilizer. You can supply them with facts and figures about the use of fertilizer by your customers, and these men will often publicize such gains for you.

The county agent will often do this through newspaper columns and radio talks. The agricultural teacher will do so through talks to his farm classes. Of course, these men may not mention your name, but interested people will contact the farmers named. During the course of conversation the inquirer is going to ask a farmer, "Where do you buy your fertilizer?" and so you will get direct benefit from this publicity.

Into the experience of a fertilizer dealer, and also across his desk, comes a flow of accurate information about fertilizers and their profitable use. This flow of material can be put to excellent educational use. Remember, there are many people interested in knowing what you know about fertilizer. The county agent and the agricultural teacher are among them.

County agent columns in many newspapers often reveal the excellent crop gains resulting from proper soil testing and fertilization following recommendations on the soil test. Wise dealers will capitalize on this county agent enthusiasm. It will cost nothing but time on your part.

4. Soil testing. Time was when farmers would say, "Oh, I guess I'll need about five tons of 6-10-10 on my land this year. That's about all I can afford, too." Farmers who bought fertilizer like this certainly were not buying wisely.

Lately, however, the correctly taken soil test can determine quite accurately just how much fertilizer the farmer needs and the chemical analysis. Soil tests are impressive when made by responsible parties; farmers have respect for such findings. The wise fertilizer dealer will see to it that every farmer in his area takes soil tests often enough to help him get the best crop production.

Some dealers say, "I just tell farmers how to take soil tests. I don't want to get into the actual work myself. It takes too much time. It doesn't pay."

Sure it takes time and some gas expense, too, but can you point out

a better way for a fertilizer dealer to set foot on a farm and be welcomed? The dealer can accompany the farmer in taking soil tests, or if the farmer is too busy he can take them himself. However, it is best to show the farmer how the job is done, so that next time he can do it properly by himself.

A lot of dealers shy away from the work of soil testing. And yet many advertising authorities say that it costs a retail dealer up to \$30 to get a new customer. Does it cost you \$30 to take a soil test for a farmer? Not likely.

5. Tours. It is usually difficult to get farmers to go on farm tours nowadays, for they are busy people. But I have talked with fertilizer dealers who tell me that farmers respond

very well to Sunday tours of fields where fertilizer testing is going on, or where spraying has been done.

Why? Because the use of large amounts of fertilizer and farm chemicals is still sufficiently new in agriculture so that farmers want to know more about it. They want to see at first hand what the results are. Second best, they'll choose viewing colored slides.

6. Custom spraying. This is a growing field in which there needs to be additional education. The farmer often wants to spray his crops or control weeds. But often he does not want to invest in a sprayer, and if he tries to hire a custom sprayer, he frequently discovers the custom man booked up for weeks ahead.

Too few fertilizer and farm chemical dealers have custom spraying services. Too few of them have sprayers for rent. Most certainly one way to sell more farm chemicals is to have a sufficient number of applicators and spray

outfits available for the farmer for use or for rent. This most certainly will encourage the use of more farm chemicals.

More colored slides of actual custom spraying operations are needed by some dealers to show to prospects at various fertilizer and spray materials meetings. One Wisconsin dealer who hired a high school teacher to run a spray outfit for him during the summer months, discovered that this man and two young high school helpers boosted his spray material volume almost three times. This shows what can be done in this field.

Because new products and techniques are coming on the market all the time in the farm chemical industry, there is need for a consistent, effective educational program. Here and there it may seem that such educational programs have become highly effective, but to keep them effective, they must still be conducted vigorously. In that direction lies more sales and more profits for the dealer.

"My Customers prefer Phillips 66 Ammonium Nitrate"

—Marvin Blair, King City Elevator,
King City, Missouri



Marvin Blair (left) is a successful fertilizer dealer, serving farmers in Gentry and De Kalb counties in Missouri.

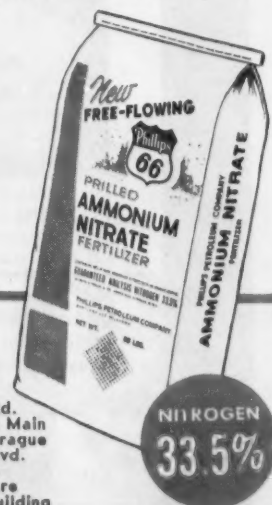


Proof of Performance: Users of new Phillips 66 Ammonium Nitrate find it easier to store and spread . . . the result of an exclusive Phillips 66 process that gives hard, dry and uniformly round prills that prevent caking and clogging in the applicator.

Mr. Blair says: "As a mixed fertilizer dealer selling supplemental nitrogen, I'm sold on the new uniform quality, storability and spreadability of the new Phillips 66 Ammonium Nitrate. My customers prefer it."

The outstanding performance of new free flowing Phillips 66 Ammonium Nitrate is winning new customers for other dealers, too. Their farm customers have discovered that the uniformly round, hard and dry prills provide free flowing application . . . no clogging or caking . . . for more uniform crop response.

Dealers get other extras, too, when they handle Phillips 66 Ammonium Nitrate. Consistent, convincing advertising of Phillips 66 Ammonium Nitrate in leading farm papers, personal service from Phillips 66 field men, and prompt deliveries are included in the profitable benefits of selling Phillips 66 Ammonium Nitrate. Order your supply of Phillips 66 Ammonium Nitrate today.



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HOUSTON, TEXAS—6910 Fannin Street
INDIANAPOLIS, IND.—3839 Meadows Drive
KANSAS CITY, MO.—201 E. Armour Blvd.
MINNEAPOLIS, MINN.—212 Sixth St. South
NEW YORK, N. Y.—80 Broadway
OMAHA, NEB.—3212 Dodge St.
PASADENA, CAL.—317 North Lake Ave.

RALEIGH, N. C.—401 Oberlin Rd.
SALT LAKE CITY, UTAH—68 So. Main
SPOKANE, WASH.—521 East Sprague
ST. LOUIS, MO.—4251 Lindell Blvd.
TAMPA, FLA.—3737 Neptune St.
TULSA, OKLA.—1708 Uffia Square
WICHITA, KANSAS—501 KFH Building

Comparison in Output of Milk Per Acre Of Fertilized, Non-Fertilized Pastures

By EMERY BARTLE
Assistant Dairyman, South Dakota State College

Soil fertility, a factor in pasture management, affects the amount of nutrients that grass can furnish.

Applying fertilizer to increase yields of growing crops is a widely accepted practice. However, there is still apparently very little fertilizer used for increasing milk yields through pasture fertilization.

Soils are often low in phosphate; therefore, it seemed that pastures in our area would respond to it. To study the effects that applying phos-

phate fertilizer on pasture may have on increasing and maintaining milk production, we conducted an experiment during the summer of 1957.

TEST COWS ON PASTURE: A pasture area containing 12.5 acres of alfalfa-brome three-year-old normal stand was selected. We divided the pasture in two areas of 6 and 6.5 acres. On April 22 we applied phosphate (0-45-0) fertilizer on the 6-acre area at a rate of 150 pounds per acre.

Two groups, consisting of seven Holsteins, four Brown Swiss, and three Guernseys each, were selected. We divided the cows into groups by selecting two cows as nearly alike as possible according to size, age, production levels, stages of lactation, and gestation, and then assigning one cow to the "Fertilized Pasture," the other to the "Non-fertilized Pasture."

Grazing started on June 1 and ran

through Aug. 31, a total of 92 days. Each group was pastured on each of the areas, the change-over being made on the 46th day of the grazing period. As herbage growth became short, we removed some of the cows to prevent over grazing.

Forage samples collected from the fertilized pasture consisted of 84.9% alfalfa and 15.1% brome, compared to 73% alfalfa and 27% brome for the nonfertilized pasture.

In each pasture, wire cages were located to secure samples of hand clipped forage which were weighed and analyzed for nutrient composition (table 1).

FEED SUPPLEMENT OFFERED: Feed offered to supplement pasture forage consisted of a grain mix of corn and oats fed at the rate of 1 pound for each 3.5 pounds of 4% fat corrected milk. Alfalfa hay feeding was started July 17, using No. 2 alfalfa. Hay was fed at the rate of 1 pound of hay per hundred pounds of live weight. All supplement feeds which were offered and refused were weighed.

The amount of milk each cow produced was weighed at each milking and butterfat tests were made once a month by the H.I.R. supervisor. The cows were weighed at weekly intervals.

STUDY PASTURE RETURNS: Table 2 shows the yields per acre of dry matter and total digestible nutrients furnished by the pastures, the production of milk and butterfat, and income after subtracting the cost of supplementary feed and cost of fertilizer. Total digestible nutrients consumed per acre for cows grazing on fertilized pasture was 2,092.1 pounds. The field produced for cows grazing on non-fertilized pasture was 1,813.07

pounds. Cows on fertilized pasture consumed 13.4% more digestible nutrients and 6.6% less dry matter than cows on non-fertilized pasture.

Pasture herbage from fertilized pasture contained 5.8% less dry matter and 5.4% more total digestible protein than from non-fertilized pasture. Grazing was more uniform on fertilized areas. Average daily herbage consumption for each cow on fertilized areas amounted to 110 pounds as compared to 99 pounds for non-fertilized.

Production yields were 16.8% more milk and 20% more butterfat for cows grazing on fertilized plots. Milk yields proportioned according to the sources of total digestible nutrients consumed by the cows show that an increase in milk production due to fertilizer amounted to 479.6 pounds (4% FCM) per acre (see table 3).

Milk produced during the grazing period was sold for 82¢ per pound of butterfat (\$3.28 per hundred, 4% FCM). This was the average price received for milk at the farm and reflects the income per acre.

As a result of fertilizer, the difference in net income per acre from the sale of milk due to proportioned source of feed amounted to \$15.73 or 15.5% increase in milk yield.

Gross income per acre amounted to \$157.13 from an acre of fertilized pasture and \$130.51 per acre from non-fertilized pasture.

There was very little difference in grass utilization, as cows on fertilized pasture received 62.94% of their total digestible nutrients compared to 63.98% for the cows on non-fertilized area.

Cows on the fertilized plots consumed 11 lb. of grass more per day and grazed the grass more evenly.

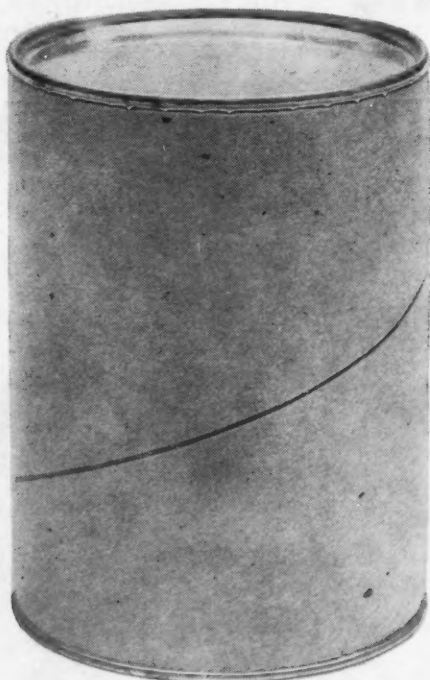
By applying 150 lb. of phosphate fertilizer to an acre of pasture, we received an extra 479.6 lb. of milk.

Hopper Hatch High in Northern California

SAN FRANCISCO—Ninety per cent of the grasshopper eggs in the foothill regions of California have hatched successfully, according to W. W. Middlekauff, University of California entomologist.

Such a high percentage indicates that northern California is in for another heavy grasshopper year with crops and gardens as far south as Kern County being affected. Checks made in the Livermore area in March showed the presence of enough grasshopper eggs per acre to produce grasshoppers capable of eating as much grass as two cows.

KALO can put your label on this can of inoculants and allow you and your dealers the greatest mark-up in the industry!



let KALO quote on your private label inoculants

by Myron E. Lusk, President and Research Director
KALO Inoculant Company



Did you know that legume inoculants can be the most profitable line of products you and your dealers sell? For example, if we pack a private label inoculant line for you, your mark-up can range as high as 48% to 51%! Where else in this business can you make money like that?

Write me today and let us tell you how we can produce your private label inoculants at prices that will make you wonder why you didn't switch to a KALO private label years ago. Clip the coupon below and attach it to your letterhead. I'll send you a sample can from our private label line!

Mr. Myron E. Lusk, KALO INOCULANT COMPANY,
Quincy, Illinois.
Please send me a sample can from your private label line of legume inoculants.

Name _____
Title _____
KALO INOCULANT COMPANY, Quincy, Illinois

Table 1—Chemical Analysis of Pasture Herbage

	Fertilized pasture (%)	Non-fertilized pasture (%)
Moisture	69.60	62.80
Ether extract	1.56	1.30
Fiber (crude)	8.07	11.90
Protein	6.86	5.93
Ash	3.12	3.35
Nitrogen free extract	11.79	14.72

Table 2—Yields and Returns Per Acre of Total Digestible Nutrients, Dry Matter, Milk and Butterfat

	Fertilized pasture (lb.)	Non- fertilized pasture (lb.)
Total digestible nutrients	3843.9	3373.9
Dry matter	6468.4	6651.3
Dry matter consumed as feed	3454.1	3689.1
Dry matter left in the field	3014.3	2962.4
Milk (4% FCM)	4922.2	4094.6
Butterfat (actual)	198.2	159.1
Value of milk*	\$162.56	\$130.51
Cost of fertilizer	\$5.63	
Difference in income after subtracting cost of fertilizer	\$157.13	\$130.51
*82c per pound of butterfat. †\$75 per ton.		

Table 3—Milk Production Per Acre According to the Source of Feed Consumed by the Cows

	Source of T.D.N.— Supplement feed (%)	Pasture feed (%)	Milk (4% FCM) produced feed (lb.)	Pasture feed (lb.)	Increased yield due to fertilizer (lb.)
Pasture					
Fertilized	37.06	62.94	1826.2	3096.0	479.6
Non-fertilized	36.02	63.98	1478.2	2616.4	

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Doing Business With

Oscar & Pat



By AL P. NELSON
Croplife Special Writer

It was about 10 a.m. when a farmer, his wife and a chubby son of about 10 came into the farm supply store owned by Oscar Schoenfeld and Pat McGillicuddy. The farmer, a German like Oscar, was Herman Weichert. He was a short, stocky fellow, with wide face and the slow movements of a man who was very methodical.

"Guten morgen, Oscar," he said, using a mixture of German and English. "Are you still putting lots of money in the bank?" Weichert chuckled, for what could be of more interest humor-wise than a remark about money.

Oscar frowned. Weichert and family went to the same church Minnie and he did, but Herman was too inclined to talk and spend other people's time when visiting. "Ach, I saf a nickel now and then," he said, "but not as many as I would like."

"Yah, it costs to lif nowadays," said Herman. "Let me use your phone, Oscar. I got a want ad to put by the paper in."

Oscar motioned to the phone on Pat's desk, and Herman came in and sat down. He got the newspaper office and began to give his ad while Mrs. Weichert, a plump woman, stood at the railing of the office and whispered to her son Wolfgang to remain quiet.

"I want to put an ad by the paper in," Herman Weichert said slowly. "Just put it in what I toldt you. Vun day about a veek ago I heard me a noise in the barnyard that did not used to be. I jumped mit the bed oudt and ran mit the door through. And der I foundt my pig grey mare tied loose and running mit the stable off wid the pasture. Nobody seen her, but who brings her back pays \$15. Yah, sure, that's what I want in. Chust like I said it. Was ist los? Don't you understand so goot? I pay you when my check from the milk company I get the first."

Herman finally hung up the phone after giving the newspaper editor his name and address.

"Herman," said his wife, "when you go by the blacksmith, Wolfgang and me some lemon drops at the grocery store we get. For dinner will Rev. Sponholz like them."

"Ach, they are plenty goot enuf for dessert, Hannah."

"Mama, I want some mettwurst, please," said fat little Wolfgang.

"Mettwurst!" cried Herman. "Nein, Hannah, too expensive. Go by the butcher shop and pick up for me my pigs' feet and my brains, but no mettwurst. Get him big bologny."

The farmer turned to Oscar. "That butcher, Schnabl. I will quit buying from him sometime. Airs he puts on. I passed him on the street and talk to me he did not one day. I stop and tell him why don't you hello me, when I know you so easy. And he says he was worrying about taxes, so talk he don't. I know. He owes money. To owe money is bad. I don't owe money, Oscar, do you?"

"No, I don't," Oscar said almost too sharply. He wanted these people to go on with their business and leave him alone, so he could work. He never liked small talk, and he did not like kidding. He wished all customers knew that.

"Ach," cried Mrs. Weichert, "look once the small sprayer, Herman. I could use when out on the field are you with the big sprayer. A clipper with a handle I could use, Herman. The back it saves."

"Don't buy it," Herman said.

"Oscar's got enough geldt. He owns most of the bank, nein?"

"I do not!" cried exasperated Oscar. "Ach, have just a little stock, maybe \$15,000. But we worked and safed for it, Minnie and me. We did not buy foolish things and waste our money."

Herman chuckled a little. He always liked to get Oscar angry. Frugal they both were, yet Herman liked to kid a little, which Oscar did not.

"Come, Mama, we got," he said. "Hurry up by the grocery so you

don't wait me so long at the blacksmith."

Oscar sighed with relief, and Tillie Mason, the bookkeeper, smiled. She liked the foreign flavor of many of the firm's customers and enjoyed their accented speech.

Now Pat McGillicuddy's voice boomed out. "Why, hello, Herman. Hello, Mrs. Weichert and Wolfgang." Pat ruffled the fat boy's hair. "Say, it's nice to see you folks. In town spending some of that money you made selling your steers?"

Herman's jaw dropped. "How you know that?"

Tall Pat McGillicuddy smiled. "I know what's goin' on in this county, Herman. I know who the really big farmers are, those that are smart and make money, and who work hard."

Herman chuckled. "He knows that, Mama. By golly, you can't keep a secret once in this town."

"I tell you, Herman," confided Pat, "what you oughta do is place an order for fall fertilizer now. You got a big bunch of hogs to sell soon, too, and with Oscar and me giving our customers a special discount on fertilizer for early birds, we spread it on your land in fall and you can plow it right down."

"Ach," said Herman, "isn't it early a little to talk about fertilizer, Pat?"

Pat shook his head. "No, Herman. Farmers with money, farmers who are wise can save money buying fertilizer early—booking it for fall delivery. You save yourself all that



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work of doing it in spring when you're busy."

Herman looked at his wife and she looked at him. Pat smiled. "Say, it's almost lunch time. Cal Edmonds over at the Slide Inn has meat loaf and raisin pie on the menu. I'll treat you three to a dinner and we can talk some more. What do you say?"

"Well," shrugged Herman, "a free meal, that is all right."

As Pat and the Weicherts disappeared, Oscar roared to Tillie: "Ach, in June he tries to sell fertilizer. And he buys them a dinner, too. And a discount! There will be nothing left."

"I think there will," Tillie smiled. "Herman bought a lot of fertilizer last year. And that is one account you won't have to worry about. Herman always pays on time."

Oscar's face was stern. "But maybe this year, he won't. Maybe it will be a dry year and no crops. Or maybe Herman will fall down and break a leg. Or go bughouse! You neffer know."

Strange Machine Aids Minnesota Fertilizer Work

WILLMAR, MINN.—A strange-looking machine is being used in carefully-designed soil fertility projects on seven Kandiyohi County farms. Heading up this work are Bob Anderson, assistant Kandiyohi County agent, and J. M. MacGregor, University of Minnesota soils researcher. Purpose of this work is to find out whether corn on one kind of soil responds to different forms of fertilizer treatment in the same way as it will on another soil.

There are seven or more different soil types in Kandiyohi County alone. Research in the past on other soils has indicated that all forms of nitrogen fertilizer—liquid, solid, and anhydrous—give approximately equal results, pound for pound of nitrogen. The problem now is to find whether this holds true in the widely varying soils in this area.

The fertilizer research machine ap-

plies anhydrous ammonia, nitrogen in liquid solutions, as well as solid forms of nitrogen fertilizer. It can also be used to apply different forms of complete starter fertilizer mixtures—both liquid and solid forms—in the corn row. Mr. MacGregor says the device makes it possible to speed up this type of research, which has been more difficult in recent years with new types of fertilizers.

General Manager Named

NEW YORK—Frank J. Pizzitola has been named general manager, chemicals division, Olin Mathieson International Corp., it has been announced by A. T. Zodda, vice president, operations. His headquarters will be in New York. Mr. Pizzitola, who joined the company in 1956, was formerly an assistant to the vice president in charge of operations. Previously he was associated with Monsanto Chemical Co. as resident sales supervisor in South America.

Foliar Spray Absorption Depends on Condition of Plant, Research Shows

EAST LANSING, MICH.—A four-year study by Michigan State University researchers indicates that the amount of plant food that plants will absorb from foliar or leaf sprays depends on the nutritional condition of the plants and how much plant food is available through the roots.

In many instances, this research was conducted with the use of radioactive isotopes. These materials were used to "tag" the plant food and follow its path through the plant. The researchers reported that both upper and lower surfaces of leaves play a part in absorbing foliar applied plant food. Some early recommendations had suggested the foliar spray should be applied to the underneath leaf surfaces because they have a greater number of pores.

Application of these sprays, the researchers concluded, should be made in the daytime or under artificial lighting conditions. Indications are that plants absorb more nutrients under these light situations.

Absorption and movement of nutrients in the plant increase directly with the rise in temperature up to an optimum point. For phosphorus, best air temperature for application is around 70° F. With potassium, the optimum temperature is within a 77 to 86° range.

Amount of plant food absorbed by leaves depends on the level of acidity of the spray solution; there is a wide difference between best levels for potassium and for phosphate.

The report also commented upon the use of sucrose (sugar) in the spray solution to increase absorption and movement of the plant food into the plant. The sucrose does help move nutrients into the plant more rapidly when the plant is low in sugar, it also reduces the absorption of the plant food by the leaves, researchers said.

Texas Bulletin Reports Plant Nutrient Needs

COLLEGE STATION, TEXAS—Data showing the average composition of nutrients in certain crops and their general nutrient needs is contained in a leaflet released by the Texas Agricultural Extension Service entitled "Soil Nutrients Removed by Some Crops." The leaflet contains a table which gives the pounds of nitrogen, phosphorus, potassium and calcium which are removed by a particular yield for field crops, forage crops and vegetable crops.

For example, a yield of 70 bu. of corn requires 63 lb. of nitrogen, 25 lb. of phosphorus, 18 lb. of potassium and 1 lb. of calcium. A yield of four tons of alfalfa hay requires 180, 40, 180 and 112 lb., respectively. The figures listed in the leaflet are average for representative conditions.

Beef Cattle Increase In Upper Michigan

EAST LANSING, MICH.—More than 100 new beef cattle herds have appeared during the last five years in the Upper Peninsula of Michigan, according to Bill Finley, extension beef specialist at Michigan State University.

He says there are now 350 cow herds—more than 10,000 head—on peninsula farms.

"Upper Peninsula farmers are finding beef herds a good business that is well suited to the climate and cropping possibilities in their area. There is plenty of good quality pasture, and forage production for winter feeding is tops," Mr. Finley related.

FERTILIZER FIRM OPENS

VISALIA, CAL.—Faabs Fertilizer Co. opened here recently with capital of \$25,000. Owners of the new firm are Dick W. Anderson, Ray Franks and Phillip Swearingen.



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NPMI PANEL

(Continued from page 1)

into profit figures," Mr. Rash said. "There is a world of information available on the profit-building effects of fertilizer, but it is not getting down to the local level."

The Kansas bank official described the values in a fertilizer conference sponsored by his bank and reported that Neosho County fertilizer use had been significantly raised from one of the lowest figures in Kansas to one of the highest.

"We feel this program has helped our customers, our community and our bank," he said.

As to the problem of credit, Mr. Rash said he believes that farmers should come to the bank for fertilizer loans and relieve the dealer of extending credit.

"We try to limit loans to 90 days," he said. "To help farmers with their production problems, we have a farm representative active in our trade area. We can do a more intelligent job of meeting farmers' credit needs because we have a close understanding of their problems. Now farmers are more inclined to come in and talk over their credit situation with us."

J. W. Clark, county agricultural extension agent, Dane County, Madison, Wis., rose to the defense of farmers who in general might be criticized for their lack of thorough knowledge of all aspects of farming.

"The farmer has been bombarded by the impact of science on agriculture," he said, "and there are many intricate details to be learned regarding proper application of chemicals in farm management." Therefore, he added, we must all cooperate to educate the farmer on proper use of new methods and materials.

"The farmer cannot be expected to keep all of this knowledge at his fingertips," Mr. Clark said. "He needs specialists to make some of these complex decisions for him and the decision-point for the farmer, so far as fertilizer is concerned, is at the time he buys it."

The key man, Mr. Clark said, is the fertilizer dealer.

"If we can get this information and knowledge down the chain to the dealer, we can expect the dealer to come through with the help the farmer needs, right at the time he needs it."

Soil testing is the most important factor in influencing farmers' use of fertilizer, according to Orville Buerge, Buerge Brothers, Harrisonville, Mo., who presented an analysis of dealers' responsibilities.

"In developing our business over the past ten years we have encouraged all customers to take soil samples, we have furnished soil sampling bags, and we have assumed the cost of the tests," he said. "Our local banks require soil tests in instances where loans are made and in every case where testing was required the loans were paid off."

"We encourage check strips in our sales program. In that way farmers can see the results of fertilizer use."

The speaker discussed one troubling situation—that of farmers putting off or reducing fertilization when weather conditions are less favorable. "We urge that they go ahead and fertilize according to normal soil requirements because we know that the good effects can carry over into the next season," he said.

Speaking as a dealer, Mr. Buerge looked unfavorably upon the increased number of types and analyses the fertilizer dealers must handle. He believes that problems of sales and inventory can be kept to a minimum if a line of fertilizers is held to fewer acceptable grades.

Questions from the floor sparked the final portions of the discussion.

They revolved around the validity of soil tests, methods of handling soil samples, the policies of banks in re-

quiring adequate amounts of fertilizers to be purchased with loans and the role of dealers as advisers for farmers.

In answer to a question about his attitude toward soil tests, Mr. Clark said he believes it to be similar to the information gained by a physician in checking over an ailing human being. The Wisconsin county agent declared that there is a sizeable element of guesswork involved even in the face of soil test results, but added that there is also psychological value in having a farmer become interested in taking soil tests.

Mr. Clark's use of the word "guesswork" was challenged from the floor, but it was brought out in subsequent discussion that the term might be "estimating," since a basis for measurement exists when soils are tested.

Panel members agreed that soil

tests are not to be considered infallible, but at the same time, they represent the best method available to measure the needs for plant food elements in the soil. In cases where soil tests disagree, the use of "horse sense" and these applications of knowledge of the general area should be a guide in knowing what to recommend, it was brought out by panel members.

The matter of educating dealers was brought up, with Mr. Buerge indicating that the farmer expects to learn a great deal from his dealer about the use of fertilizer, and that the latter "had better know the answers." The county agent observed that it is the responsibility of the dealer, rather than the county agent, to advise growers on the use of fertilizer and what kinds to purchase.

Mr. Rash, in reply to a question, said that his institution tries to work closely with the fertilizer industry and favors the use of demonstration

plots to show results. It is discouraging, he observed, that so few farmers are interested in demonstrations, when so much might be learned from them. He said that his bank puts up wall charts showing how fertilizer should be placed, and has literature available to instruct the farmer on the economics of good fertilization.

"We wish we had more good farmers wanting fertilizer loans," Mr. Rash said. He added that it would be ideal if fertilizer loans could be limited to good farmers only, since they apply enough to make a difference in their per acre yields and profits, and thus become more solid citizens, deposit more money in the bank, and acquire a better credit standing for the purchase of additional farming aids.

NEW STORAGE TANKS

DERRY, ORE.—The Polk County Farmers Co-op has recently completed construction here of four storage tanks for liquid fertilizer. Capacity of the tanks is 75,000 gallons.

38 lbs of pork

for every person in the U.S.

from Successful Farming farms!

In 1957, the United States produced 10,700 million pounds of pork . . . consumed 62 lbs per capita. Since six out of ten of all hogs and pigs sold alive are produced on SUCCESSFUL FARMING farms . . . the audience of this one magazine had production large enough to put approximately 38 lbs of pork on every plate in the nation!

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NPFI ACTIVITIES

(Continued from page 1)

factors in lowering the per unit cost of production," but added that "much remains to be done in the field of research and education and the Institute is working closely with all leaders in the field of agriculture in helping to build better incomes for farmers through the adoption of sound farming practices."

Mr. Beers said: "To help farmers establish sound production programs," the Institute has launched a crop production potentials program in several midwestern states. This was developed in cooperation with soils specialists at the agricultural colleges. The program has a twofold purpose: (1) To help farmer cut his unit costs of production and boost profits per acre; (2) give the farmer effective information to convince him he can do a better crop producing job.

"The Institute's Midwest office has

prepared and distributed wall charts for Illinois and Wisconsin showing the major soil areas of each state, plus information on the potential yields in each area and the management methods needed to achieve them.

"In addition, the Institute has prepared localized check lists giving farmers specific facts on the soil types in their area, and the crops suited to their soils," Mr. Beers said.

"County agents, vocational agricultural teachers and other extension personnel have received copies of the wall charts and check lists for use in their areas. These charts and check lists have been termed 'one of the most important tools' available to county extension directors in helping farmers establish sound production programs.

"These crop potentials represent a

reasonable goal attainable by nine out of ten farmers in a given area, according to the specialists who have established these yields."

Dr. Tisdale said: "The fertilizer industry in most Southeastern states could, by effectively encouraging soil tests, double its sales.

"However, there are some areas, notably Florida, where our members have raised serious questions about the value of current soil testing procedures, and I am excluding Florida from my remarks.

"Estimated fertilizer needs in the Southeast are great, but realistic. The tonnages recommended are those known to be needed for a grower to get the greatest net income from his farming operation, and there's a relatively sound but simple expedient which can be used to move these tonnages—it is a sound soil testing program, based on experimental evidence."

Dr. Tisdale reported that the study made for the Institute by National

Analysts "clearly indicates the importance of this (soil testing) technique as a means of increasing fertilizer use on most crops in most states," adding that "we plan accordingly to increase our support of this type of activity."

"Because of the importance of credit to the adequate use of fertilizer by farmers, the Institute is working with members of the banking profession in several ways," Dr. Tisdale said. He reported that the Institute was providing mats for use by bankers for advertising in local newspapers, with messages "urging their farm customers to use adequate fertilizer and lime and to do so on the basis of a sound soil test."

Dr. Tisdale said that "we intend to expand and intensify these programs as quickly as possible."

Dr. Beacher told his listeners that "farm fertility demonstrations are playing an increasingly important role in getting more farmers to use fertilizer at recommended levels, and concerted efforts are being made in the Southwest to get more farmers to see more demonstrations."

"Farm demonstrations are receiving increasing emphasis in fertilizer educational programs of colleges and extension services in southwestern states," he reported. "The increased emphasis is heart-warming because a recent survey of the Institute shows that farmers overwhelmingly approve of demonstrations and are favorably influenced toward fertilizer use when they see them.

"Notwithstanding, hundreds of demonstrations have been put out and over two thirds of the farmers surveyed in the Southwest said they had never visited any such demonstrations. We are working with the land-grant colleges in every way possible to increase the number seeing the tests."

Dr. Beacher said that "colleges have made admirable progress in publishing and broadcasting demonstration results, and county agents use all readily-available media to encourage farmer visits to field days on local demonstrations. The Institute is providing new stimuli and opportunities for the colleges by providing demonstration programs, cartoon mats for newspapers, radio and television productions, feature articles for important farm magazines, and sound-color films on demonstrations to give other states the benefit of the effectiveness of the demonstration approach in the field of soil fertility."

He also reported that "an Institute-sponsored research project at one land-grant college has provided outstanding information on economic interpretation of fertilizer response."

Dr. Garman, Northeast regional director for the NPFI, told the convention that "expansion of educational efforts and proper utilization of the media used in agricultural communications can accelerate progress toward higher net farm income, with benefits accruing in rural living standards and to the industries which serve agriculture.

"Soil testing provides the most practical tool of today whereby farmers can expect to realize the greatest returns on a dollar invested in fertilizer. However, soil testing is no better than its practical application on the farm, and unless more farmers use soil tests and follow the recommendations, farm income in most states will remain at low levels in comparison with where it should be."

Dr. Garman said that "trade associations representing the agricultural industries are indeed fortunate in that their objectives are synonymous with those of the land-grant colleges and the leaders in the field of agricultural communications, and that because of this all can work closely together in striving for a sounder and more prosperous agriculture."

"And, we are fortunate indeed that

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the various mass media of communications serving agriculture have some of the most outstanding and effective people in the business. Each medium can play a definite role in the educational process, either in interpreting research findings or in the steps involved in carrying through until the new information is adopted as regular farm practice. Utilization of the right medium or media at each stage in the process is essential."

Winding up the presentations on what the National Plant Food Institute is doing in changing farmers' attitudes toward fertilizers, F. Todd Tremblay declared that "even during the period of agricultural economic stress, farmers in the Northwest continued to use more plant food," emphasizing that "the obvious reason for this increase is that it is paying dividends to the farmer in the form of more net dollars return an acre."

"Despite the great amount of research on crops and fertilizers which has been done in the last decade, many farmers are still not using the optimum amounts of fertilizer recommended by the state and federal authorities."

"A more extensive educational program is needed in the Northwest to demonstrate the merits of making proper use of fertilizer on the various crops grown in the region. The Institute has recently inaugurated an expanded program in the Pacific Northwest to help the various agencies develop this educational material and get it into general use."

"In addition to making practical use of the knowledge that we have already accumulated, additional research is needed on fertilizer use throughout the area. Wheat is an example of a crop where research workers have made vast strides in the last few years on proper fertilization, both in the irrigated areas and in the dryland regions. The present knowledge of the inter-relationship between soil moisture, fertility, variety and climatic conditions has enabled wheat farmers of the area to greatly increase their net return per acre."

"The yields per acre that are now being attained may be increased even more as we gain knowledge through research on other elements that may be lacking, such as sulfur and phosphate, or develop new varieties that make more efficient use of water and plant food. Much more research is needed on rates, ratios and placement of fertilizer on all the crops grown in the irrigated areas throughout the West."

"Tree fertilization studies in the Northwest are in their infancy. Preliminary studies, however, indicate that fertilizers may be a prime factor in enabling foresters to carry out proper management practices. The expanded program of the Institute in the Pacific Northwest is aimed at helping to promote the proper use of fertilizers on these and other crops as determined by research and extension personnel in the area."

FMC Appointment

NEW YORK—C. Byron Richards has been appointed director of industrial relations for the chemical divisions of Food Machinery and Chemical Corp., it has been announced by Dr. C. F. Prutton, executive vice president. For the past two years, Mr. Richards has been industrial relations manager at FMC's largest chemical installation, the South Charleston, W.Va. plant of the Westvaco Chlor-Alkali Division.

NAMED TO COMMITTEE

SANTA FE, N.M.—W. Aubrey Smith of the Southwest Potash Corp., Carlsbad, has been named to the advisory committee of New Mexico's Economic Development Commission.

Gloomicides

"Well, I had quite a day at the office," announced the business tycoon to his wife. "I took an aptitude test."

"Oh, good grief!" breathed his wife. "It's certainly lucky you own the company!"

The telephone installer stared doubtfully at the formidable looking animal lying on the doorstep. "What kind of a dog is that?" he asked the little old lady.

"Don't rightly know," she said. "My brother sent it from Africa."

"Well," the installer hesitated, "it's the oddest looking dog I've ever seen."

The prim lady nodded her head. "You should have seen it before I cut its mane off."

A woman was filling out an accident report. She had dented the fender of a parked car while trying to park her own. One question on the report was, "What could the operator of the other vehicle have done to avoid the accident?"

She wrote, "He could have parked somewhere else."

In the championship game of the marble tournament, one little boy missed an easy shot and let slip with a real cuss word.

A preacher on the sidelines heard the remark and asked, "George, what do little boys who swear when they are playing marbles turn into?"

"Golfers," came the prompt reply.

Two old gents just off the farm were spending the night in the city and went to a burlesque show. During one of the acts a curvaceous

blonde was shown taking a bath in a large wooden tub.

"Ain't that something?" remarked one to his companion.

"Sure is," said the other. "Been years since I've seen a wooden tub."

We used to believe that the world's greatest skeptic was the man who, seeing a giraffe for the first time, stared at it in silence for a full 5 minutes, then said, "There's no such animal." But we've taken the Oscar away from him and awarded it to the fellow who battled for hours to land an enormous trout.

When it was eventually landed, the awe-stricken onlookers babbled their amazement at a fish of such gigantic proportions, but the fisherman did not appear to share their excitement. He stared at the monster gloomily, then turned and asked for assistance.

"Give me a hand to push it back in again," he begged. "It's a lie."

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FOR FERTILIZER MANUFACTURERS! USP now offers three outstanding grades of potash. USP's Higran, a new specially sized white granular (62/63% K₂O) and USP's Higrade muriate (also 62/63% K₂O). Both are the purest agricultural muriates now available. USP also offers Granular muriate which contains 60% K₂O. All three are non-caking and free-flowing throughout.

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NPFI CONVENTION

(Continued from page 1)

look at the situation to make their information more effective and understandable to the growers. We need to take a step or two backwards to gain a new perspective. From that point, we should begin an effective program that will remedy the need for more information about the efficiency of fertilizer."

Another area of effective education, the speaker said, is to make full use of mass media in reaching the farmer.

The use of group instruction techniques was stressed also by the educator in his talk. In this way, he pointed out, information on local conditions can be adapted and suggestions tailored to local needs may be made for optimum benefit.

Group efforts need to be expanded, Mr. Pendergrass said. They need to be enlarged with greater participation of county agents and others who possess the knowledge needed by growers.

Fertilizer dealers, he said, should sit down and discuss with the growers their common interests, and thus build up good relationship. "There is a big area for work in this direction, and it needs to be expanded to the advantage of all concerned," he said.

Extension work succeeds best when individual counsel is given, the convention group was told. There is a healthy tendency toward this type of individual counseling, and this, along with increasing numbers of soil tests, can be very helpful in selling fertilizer, Mr. Pendergrass said.

Demonstrations, if carried out correctly, can also be a real boon to fertilizer sales, the speaker declared. They can be of much more value when done cooperatively on a community-wide basis, and when accompanied with adequate publicity to call attention to the plots involved.

The last area in which big strides might be taken, Mr. Pendergrass said, lies in the scope of working with youth. Projects worked out with 4-H groups and the Future Farmers of America can make a significant difference in the practices of fertilizer users a few years hence.

W. E. McGuirk, president of Davison Chemical Co., division of W. R. Grace & Co., Baltimore, and chairman of the NPFI Special Study Committee, outlined some of the things that industry might do to cause farmers to change their attitudes towards fertilizer. He reminded that, because of adverse weather and other conditions, tonnage of mixed fertilizers in the past five years is down some 4½% and is expected to drop even further in the current season.

At the same time, he said, productive capacity is on the increase. For example, the over-all capacity for production of mixed fertilizers in the 1952-53 season was some 27 million tons, while it is now some 30 million tons. Nitrogen-producing capacity of the industry in the 1952-53 year was 1.5 million tons, and the present figure is 3 million tons rated capacity which, the speaker observed, might actually be some 25% greater.

Capacity of P₂O₅ was 3,577,000 tons in 1952-53, and today is 4,600,000 tons. K₂O capacity was 1,700,000 tons in 1952-53 and 2,650,000 tons at present, plus the addition of new production areas in Canada.

In view of these facts, plus rising costs in the industry and indications that individual advertising efforts have not had sufficient impact on farmers to change their attitudes significantly toward fertilizers, Mr. McGuirk declared that "the time has come for changes."

First, he said, "we can accept the fact that no one company has the funds to put on an advertising and

sales promotion campaign of the magnitude needed for our industry." He suggested, therefore, that an intensive program of joint education, advertising, and sales promotion be launched through the NPFI.

"The best talent in the country must be contacted to develop our plant food story and then take it to the farmer," he went on, and advised that the costs involved should be regarded not as an increase in advertising expense "but as a way to spend advertising dollars more effectively."

Mr. McGuirk suggested specifically, that immediate steps be taken to determine those who are willing to contribute, and if sufficient interest is shown, the NPFI staff should work out details and name a committee to explore the matter thoroughly.

He reviewed the work done by

other industries who have been successful in reversing unfavorable trends through intelligent counter measures, predicting that the fertilizer industry, also, could make headway in this direction.

The June 17 morning session comprised the showing of a film "The Salesman," an address by Fred C. Scribner, Jr., under-secretary of the treasury, and a time-lapse film presentation, "Watching Fertilizer Work," by John Ott, John Ott Pictures, Inc. John A. Miller, NPFI president, was chairman of the session.

Mr. Scribner, speaking on "The National Economy, Today and Tomorrow," told the group that our total expenditures for the current fiscal year will be close to \$73 billion. "While revenue receipts are difficult to forecast at this time with any great accuracy we expect that they will be in the neighborhood of \$70 billion," he said. "This means, of course, a deficit of around \$3 billion

as of June 30, the end of the fiscal year."

Mr. Scribner said, "Gross national production is down about 4% and personal income is down about 1% from the nation's all-time record peaks," but he said that "measures were adopted to cushion the decline and to promote well-adjusted public confidence."

"The actions to date have been the prudent actions which central governments can take in situations of this type, which will aid the country without so limiting or affecting free enterprise as to interfere with the buoyant factors of our system which must be free to contribute to the recovery."

The under-secretary pointed to "favorable signs on the economic front," citing that: "Steel production is rising and is now up about 36% from a low point in April; construction is making a very favorable showing with the first five

for richer ^{sales} fields this fall...

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--- here's why your ad will sell --->

months of calendar 1958 showing an all-time record of total construction expenditures for the period; engineering construction awards for the four weeks of May were up 32% over a year ago."

He said: "In any discussion of our present economic situation, I wish to make very clear that the first and primary concern of the administration in Washington has been to see that all practicable steps are taken and continue to be taken to help provide job opportunities at the earliest moment for those Americans who are out of work because of existing business conditions."

PLANT TO CLOSE

JEROME, IDAHO — Cor Vissers, mountain states division manager for the Associated Seed Growers, Inc., New Haven, Conn., reports the firm will close its branch plant at the end of the current shipping season.

Monsanto Announces Shifts in Personnel

ST. LOUIS—Several appointments and promotions in the Inorganic Chemicals Division have been announced by Monsanto Chemical Co.

W. R. Bone, St. Louis, M.S. agricultural economics, University of Illinois (1951), has been appointed product sales manager of agricultural chemicals sales for the division at St. Louis. He has been technical service representative for the division's sales department since 1956.

Stewart D. Daniels, St. Louis, B.S. chemistry, University of Illinois (1949), has been appointed technical service manager for agricultural chemicals, after serving as a member of the division's sales department since 1956.

John C. Doctor, St. Louis, B.S. agriculture, University of Wisconsin (1947), has been appointed an associate product sales manager for di-

rect application liquids. He has been a member of the division's sales department since 1956.

Leroy Donald, St. Louis, M.S. botany, Mississippi State College (1928), has been appointed chief agronomist for the division at St. Louis, after serving as director of agricultural sales development since 1956.

J. R. Glatthaar, Chicago, B.S. chemical engineering, University of Missouri School of Mines & Metallurgy (1939), has been appointed assistant director of agricultural chemicals sales for the division at St. Louis. He has been the division's district sales manager at Chicago since 1956.

R. W. Goldthwaite, St. Louis, has been appointed associate product sales manager for fertilizer manufacturers, after serving as an assistant sales director since 1956.

B. M. Machen, St. Louis, has been appointed district sales manager of a newly established agricultural chemicals sales office at New York.

Diamond Alkali Co. Affiliate Completes New Plant in Mexico

CLEVELAND—Completion of additional plant facilities at Hermosillo, Sonora, Mexico, by Insecticidas Diamond del Pacifico, S.A. de C.V. has been announced by Francisco Schwarzbeck, general manager of the company, an affiliate of Diamond Alkali Co., Cleveland.

Insecticidas Diamond del Pacifico, S.A. de C.V. already operates a plant in Ciudad Obregon, Sonora, Mexico.

Design engineering and installation of the new plant were supervised by the Diamond Alkali engineering staff. Sales of agricultural chemicals produced at the new plant will be handled by Agro Quimica del Pacifico, S.A., Diamond's distributor for the Hermosillo area.

Phillips Continues Price of Anhydrous

BARTLESVILLE, OKLA.—A continuation of the \$88 per ton price for anhydrous ammonia was announced for the next fertilizer season by Phillips Petroleum Co. for shipments in transport truck and car lots f.o.b. its Houston, Texas, and Etter, Texas, plants.

To encourage off-season use of fertilizer during the months of August and September, the price will be \$80 per ton; and during October, November and December, the price will be \$84 per ton, the company said.

The lower off-season prices follow a similar pattern contained in recently announced nitrogen solutions and ammonium nitrate prices.

Frontier Receives First Shipment from New Refinery

WICHITA, KANSAS—The Frontier Chemical Co. has received the first shipment from the new petrochemical facility of the Vickers Petroleum Co.'s Potwin, Kansas, refinery. The first tank car contained benzene, to be used by Frontier in the manufacture of benzene hexachloride. In addition to benzene, the Vickers petrochemical plant, which went on stream June 1, is also producing toluene, xylene and V-100—a high flash paint aromatic solvent.

OFFICERS

(Continued from page 1)

D. Stewart, Jr., Federal Chemical Co., Louisville; W. E. Shelburne, Armour Fertilizer Works, Atlanta; E. N. Carvel, Valliant Fertilizer Co., Laurel, Del., and Wallace B. Hicks, Wilson & Toomer Fertilizer Co., Jacksonville, Fla.

Victor A. Ericson was elected to the board to fill the unexpired term of Walter Meeken. Both are with Consolidated Rendering Co., Boston. J. C. Crissey, GLF Soil Building Service, Ithaca, N.Y., was named to fill the unexpired term of W. T. Steele, Jr., Richmond.

Elected as members of the Executive Committee were John L. Christian, Monsanto Chemical Co., St. Louis; Ralph Douglass, Smith-Douglass Co., Norfolk; Dean R. Gidney, U.S. Potash Co.; Howard Parker, Sylacauga Fertilizer Co., Sylacauga, Ala.; Stanley Learned, Phillips Chemical Co., Bartlesville, Okla.; Mr. Wilson; Mr. Shelburne; Mr. Bennett, and Mr. George.

Price to Remain

KANSAS CITY—Spencer Chemical Co. has announced that the July, 1958 price of Spencer "Mr. N" ammonium nitrate fertilizer will remain the same as at present. Seasonal discounts, if any, will not be in effect until Aug. 1, 1958 and would apply only on shipments after that date, the company said.

EACH ISSUE DESIGNED TO BOOST OFF-SEASON TONNAGE AND PROFITS

Why special issues?

Off-season sales are desirable to everyone concerned, including the buyer. Croplife's editors sense the need for increasing off-season sales to help level off consumer demand, and to lessen the spring rush. For the past two years, special issues have appeared and their success warrants this, the third series.

The Need for Four Complete Issues . . .

Croplife's first Fall Fertilization coverage appeared in a Midwest Marketing Issue—which limited somewhat the scope of the contents. The success of the initial attempt pointed up the need for specialized coverage in each crop-area—South, West, Midwest and Northeast. Four tailor-made issues will bring specialized information to each of these regions.

Editorial Matter Shows the Way . . .

Editorial material is designed to be useful to all segments of the industry—manufacturers, distributors and retailers—in giving fall sales a big push this year. Much of the copy is planned for use in actual over-the-counter sales talks with farmers. Some may be adapted for bulletin board use. Other material can be utilized by dealers in local newspaper advertisements or direct mail campaigns. Plans call for a "question-and-answer" feature; state recommendations for fall fertilization and maintenance of pastures; articles by authorities on fertilization, weed and brush control, insect control and the economics involved. They all point toward the same goal: INCREASED FALL SALES!

Pinpoint Your Advertising Message . . .

This makes it possible—by picking appropriate issues—to key your message to your area of marketing interest—to your prospects. This close tie-in with editorial material will give your advertisements the greatest possible impact. It will deliver your sales messages to your prospects—all the way down the marketing line—at the right time . . . it will help them map out plans for increased fall sales of your products. Here's an opportunity for you to present your specific fall sales story . . . to point to the

things you are doing—the sales-aids you offer—to help distributors and dealers sell.

Reader-Response Assured . . .

Requests for extra copies of the special-emphasis issues of both 1956 and 1957 were received at an unprecedented rate, with all available copies being exhausted within a short time following their appearance. (We still regret being unable to fulfill all requests.) This surge of response means just one thing: That these special emphasis issues enjoy unusual readership. And that, in turn, is the advertiser's most sought-after assurance . . . that his message will be seen by an interested readership.

Make Your Plans Now . . .

Make plans now to take advantage of this outstanding fall fertilization series of special emphasis issues. Here's an unusual opportunity to tie-in your sales message with complete news and feature coverage of a timely and important subject. Contact the Croplife office nearest you for complete details and any service Croplife's sales representatives can offer.

HERE ARE THE CLOSING DATES

JULY 14, South Marketing Issue, CLOSES JUNE 30

JULY 21, Midwest Marketing Issue, CLOSES JULY 7

JULY 28, West Marketing Issue, CLOSES JULY 14

AUGUST 4, Northeast Marketing Issue, CLOSES JULY 21

Croplife

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July 14 page(s)

July 21 page(s)

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**RESERVE
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NOW**

Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.

LESSON FROM AN ORCHARD . . .

Entomologists Recall Tests Where Nature Failed to Halt Bug Damage in Apple Trees

CAN fruits and vegetables be grown successfully on a commercial basis without the use of any pesticides? Is it possible for operators of large orchards to produce acceptable fruit for today's discriminating consumer without the help of pesticides to control both insects and plant diseases?

Actually, the answer should be self-evident; but there are still a surprising number of folks around who feel that if nature were allowed to handle the situation, unaided, everything would be just dandy. The bad bugs would be eaten up by the good ones; plant diseases would be eliminated somehow; fruit and vegetable production would abound, and people would be healthier and happier. But would they?

Such an experiment was actually made some years ago by the Idaho Agricultural Experiment Station at Parma. The station leased a five-acre orchard back in 1935 with the idea of testing the value of the combination of parasites, scraping and banding, orchard sanitation and other good cultural practices in lieu of the use of insecticides for controlling orchard insects.

Parasites of both the codling moth and San Jose scale were liberated freely for several seasons and, in 1936, recoveries indicated that the beneficial species had become well established in the orchard.

Despite this fact, however, the 1936 apple crop was nearly 100% wormy, and the San Jose scale was extremely abundant, according to data in the Federal Records Repository.

Dr. B. A. Porter, chief of the fruit and vegetable insects research branch, entomology research division, U.S. Department of Agriculture, went to the trouble of looking up this data to give Croplife readers the benefit of information in the USDA files. He says that in 1937, worm injury was greatly reduced, ranging from 33% wormy for the Winesap variety of apples, 50 to 53% wormy for Rome Beauty and Jonathan varieties; but in 1938, practically all fruit was wormy and only a light crop was gathered.

"We have no subsequent reports on this experiment, but it is our recollection that it was discontinued because of the failure of the beneficial insects and cultural practices to control the insect pests in the orchards," Dr. Porter states.

He tells also of another experiment made in 1935, near Kearneysville, W.Va., which was similar to the Idaho test with the exception that in the West Virginia case, no parasites were introduced in the orchard.

The table appearing on this page tells a graphic story of what happened when "nature" took over in the West Virginia orchard. Tabulations showed a drastic reduction of yield over a seven year

period, from 6,593 bu. in 1936 to 2,538 bu. in 1942. Not only was the quantity greatly reduced, but there were marked increases in the percentage of injury and the amount of fruit prematurely dropped. In 1942, when the yield was lowest, 93% of even those few bushels grown, were injured from being dropped.

In recalling further details of the West Virginia test, Dr. Porter said that studies were also made to determine whether natural enemies and good cultural practices, together, could prevent codling moth from building up to an injurious level following a year in which there was no crop on which the codling moth could develop.

"In this orchard, a delayed dormant and pink and petal fall sprays were applied to control scale insects, aphids, the plum curculio and apple scab. No applications were made for codling moth control. Despite this fact, the codling moth population built back to a highly injurious level the second year following the absence of a crop. After the second year of high fruit damage in the absence of the use of insecticides, the experiment was abandoned," he reports.

It is not difficult to see why the experiment was abandoned . . . nor is it hard to imagine the fate of most orchards around the country if the trees were left to nature to take care of them and to keep them in top-producing shape.

Another entomologist, Claude Wakeland, plant pest control division of the USDA agricultural research service at Denver, also recalls vividly some of the details of the Idaho experiment. It was set up originally, he says, "to last until some degree of natural control could be established or it could be determined that, even in the absence of insecticides, parasites or predators could not control the orchard insects." Although the experiment did not continue as long as originally expected due to the untimely death of R. W. Heagle who was in immediate charge of the experiment, some significant things did develop.

"The most conspicuous thing I remember was the rapid increase in Scymnus lady beetles predatory on San Jose scale and spider mites," Mr. Wakeland recalls. "These had been present, but of minor importance where orchards had been sprayed in the dormant with lime-sulfur and especially with dormant oils.

"The orchard, as was to be expected, was very severely damaged by San Jose scale which killed many branches and marked much of the fruit, but I had great hope that the lady beetle population would become so great that scale would be controlled and the orchard brought back to a productive stage by pruning out the old wood killed before Scymnus had increased to a point where it might control scale.

"As for codling moth, the experiment was a complete failure, for the amount of sound fruit harvested was so small that it wouldn't even pay for sorting expense."

It is very likely that this tells the story of what would happen if anti-pesticide legislation or other factors should tie the hands of agriculture and if public sentiment, through unfounded fear of residues, should prevent the necessary use of pesticidal protectants on crops.

TABLE 1

Year	Total crop			Prematurely dropped fruit	
	Quantity Bu.	Wormy %	Injured %	Portion of crop %	Injured %
1935	...	48	78	...	89
1936	6,593	48	55	61	71
1937	3,421	38	72	45	89
1938	5,106	45	63	66	76
1939	3,352	35	62	50	77
1940	3,507	43	72	35	88
1941	5,778	45	62	59	78
1942	2,538	40	84	60	93



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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

Editor

DONALD NETH

Managing Editor

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WASHINGTON CORRESPONDENT — John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

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MEETING MEMOS

July 27-29—New Mexico Grain and Feed Dealers Assn., Summer Meeting, Hotel Clovis, Clovis, N.M.; Parley Jensen, P.O. Box 616, Albuquerque, N.M., Assistant Secretary.

Aug. 12-14—Beltsville Cotton Mechanization Conference, Civic Auditorium, Brownsville, Texas; Sponsored by the National Cotton Council.

Nov. 10-11—Agricultural Aviation Research Conference, Milwaukee.

Meeting Memos listed above are being listed in this department this week for the first time.

June 24—West Virginia University Agronomy Field Day, Reymann Memorial Farms, Wardensville, W.Va.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

June 28—Del-Mar-Va Peninsula Fertilizer Assn., Annual Meeting, Ocean City, Md.

July 1-10—Georgia Fertilizer Meetings Sponsored by the Georgia Plant Food Educational Society; July 1, W. H. Norris Farm, Pike County; July 2, T. B. McDowell & Sons, Dougherty County; July 9, Ernest Nunn Farm, Jackson County; July 10, Banks Dairy Farm, Bulloch County.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 11-12—Pacific Northwest Section, American Society of Range Management, Summer Meeting, Kamloops, B.C.

July 13-16—American Society of Agronomy, Northeast Branch, Cornell University, Ithaca, N.Y.

July 13-15—Plant Food Institute of Virginia and North Carolina, Summer meeting, Cavalier Hotel, Raleigh, N.C.

July 16-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

July 24—West Virginia University Agronomy Field Day, Ohio Valley Experiment Station, Point Pleasant, W.Va.

July 29-30—Annual Fertilizer Industry Conference Sponsored by the Alabama Polytechnic Institute Experiment Station; Black Belt Substation near Marion Junction, Ala. (July 29) and Prattville, Ala. Experiment Field (July 30).

July 30—Kentucky Fertilizer Conference, Greenville, Ky.

Aug. 4—National Joint Committee

on Fertilizer Application, Annual Meeting, Purdue University, Lafayette, Ind.

Aug. 4-8—American Society of Agronomy, Annual Meeting, Purdue University, Lafayette, Ind.

Aug. 12-13—Ohio Pesticide Institute, Summer Field Tour, Ohio Agricultural Experiment Station, Wooster, Ohio, J. D. Wilson, Ohio Agricultural Experiment Station, Wooster, Institute Secretary.

Aug. 20-24—Canada Fertilizer Assn. (formerly Plant Food Producers of Eastern Canada), Annual Meeting, Manoir Richelieu, Murray Bay, Quebec.

Sept. 4—Grassland Field Day, Rutgers University Dairy Research Farm, Beemerville, N.J.

Oct. 14-15—Western Agricultural Chemicals Assn., Annual Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

Oct. 20—Annual Sales Clinic of Salesmen's Assn. of the American Chemical Industry, Inc., Roosevelt Hotel, New York.

Oct. 20-21—Fertilizer Section, National Safety Council, annual fall meeting, La Salle Hotel, Chicago, Ill.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-31—Fertilizer Industry Round Table, Sheraton Park Hotel, Washington, D.C.

Oct. 29-31—National Agricultural Chemicals Assn., 25th annual meeting, Bon Air Hotel, Augusta, Ga.

Nov. 9-11—California Fertilizer Assn., 35th Annual Convention, Ambassador Hotel, Los Angeles, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

Nov. 18-20—Washington State Weed Conference, Moses Lake, Wash.

Nov. 24-25—Entomological Society of America, Eastern Branch, Annual Meeting, Lord Baltimore Hotel, Baltimore.

Dec. 1-4—Entomological Society of America, Annual Meeting, Hotel Utah, Salt Lake City.

Dec. 3-4—North Central Weed Control Conference, Netherland Hilton Hotel, Cincinnati.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Dec. 9-11—Chemical Specialties Manufacturers Assn., Annual Meeting, Commodore Hotel, New York.

Dec. 17-18—Beltwide Cotton Production Conference, Rice Hotel, Houston, Texas, sponsored by the National Cotton Council.

Jan. 20-22, 1959—California Weed Conference, Santa Barbara, Cal.

Winners Named in Georgia Grazing Program

ATHENS, GA.—Ernest Nunn, Jackson County dairy farmer, has been named top state winner in the Georgia grazing system and feed production program. Mr. Nunn's selection was announced by Charles R. O'Kelley, state agricultural leader for the agricultural extension service, University of Georgia College of Agriculture which conducts the program annually. It is sponsored by the Georgia Plant Food Educational Society.

Phil Spooner, beef cattle farmer in Seminole County, was named winner of second place in the program.

Mr. Nunn operates a 185-acre farm with 55 acres in cropland and 69 acres in permanent pasture. His farm motto is "efficiency" and, according to Ralph Johnson, extension agronomist in charge of the program, he utilizes every acre to top capacity. His usual fertilizer practice is to apply 500 lb. of 4-12-12 and 50 lb. of nitrogen per acre on all pasture land. He also applies lime to all land as needed.

Mr. Spooner operates a 1,675-acre farm with 625 acres in cropland and 1,000 acres of permanent pasture. Summer pasture plants consist of Coastal Bermuda, Pensacola and common Bahia, crimson clover and white clover. Average annual fertilization rates on these pastures are 400 lb. of 4-12-12 fertilizer and 40 lb. of nitrogen per acre. Last year, 60 lb. of potash per acre was applied to 300 acres where soil had a low potash content. Fertilization on winter grain consists of 500 lb. of an 0-10-20 and about 60 lb. of nitrogen per acre. Lime is applied to pasture land according to soil tests when needed—about every five years.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of \$11 per column inch.

All Want Ads cash with order.

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KILL SUBMERSED water weeds which foul up motor propellers, tangle fishing gear and choke irrigation ditches with R-H Granular Weed Rhap. Inexpensive, easy to use, sure results. For details write Reasor-Hill Corporation, Box 36CL, Jacksonville, Ark.

KILL BRUSH at low cost with amazing R-H Brush Rhap. Will not injure grasses, grains, cattle, or other animals. See your dealer, or write Reasor-Hill Corporation, Box 36CL, Jacksonville, Ark.

FOR FAST ACTION AND RESULTS try Croplife's CLASSIFIED ADVERTISING

LINDSAY OFFICIAL DIES

CHICAGO—Mark W. Eichelberger, 58, West Chicago, executive vice president of the Lindsay Chemical Division of the American Potash and Chemical Corp., West Chicago, died June 5. Surviving are his widow, Martha Eichelberger, a son, Charles Eichelberger, a brother, and two sisters.

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22	23	24	25	26	27	28	22	23	24	25	26	27	28	22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30						29	30	31					29	30	31					29	30					
FEBRUARY							MARCH							APRIL							MAY						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14	8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21	15	16	17	18	19	20	21	15	16	17	18	19	20	21
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29	30						29	30	31					29	30	31					29	30					



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